

AIRFIX magazine

OCTOBER 1971

FOR PLASTIC MODELLERS

15p
MONTHLY



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THIS
ISSUE**

South African Air Force Harvard colours
Panzer IV conversions and Fallschirmjäger

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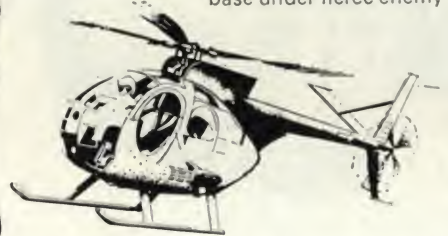
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H288 MITSUBISHI RAIDEN J2 M3 The Japanese navy 'Thunderbolt' produced in 1943 as a swift interceptor fighter to defend Japan against the ravages of the heavy bombing of America's B 29's. (This kit will be available October.)

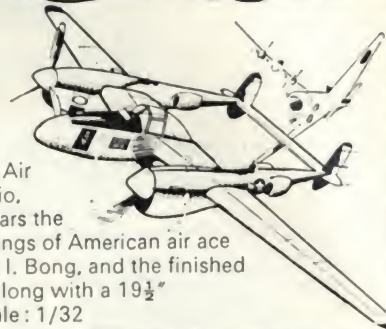


H280 P38 J LOCKHEED

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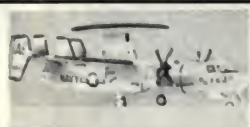
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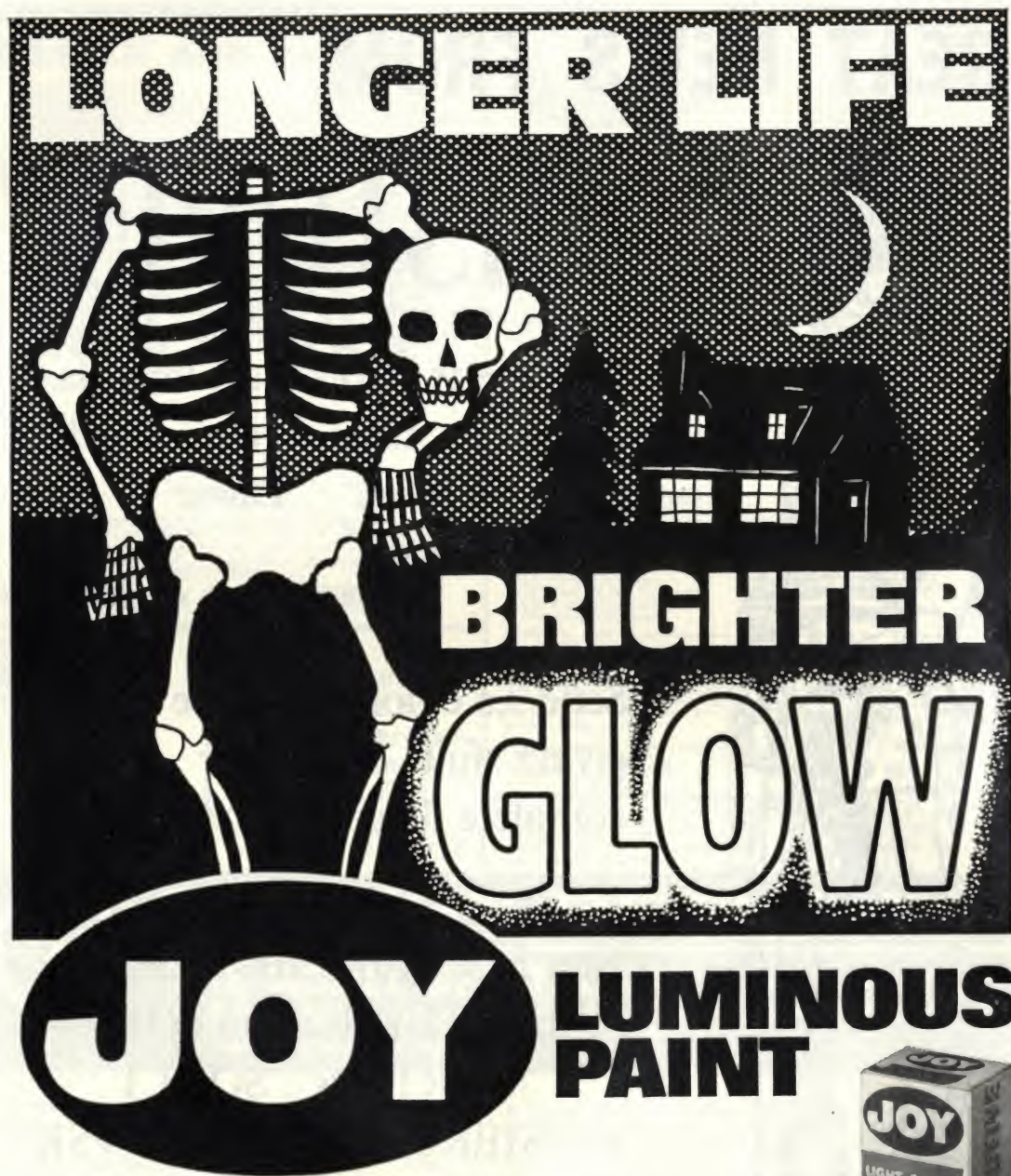
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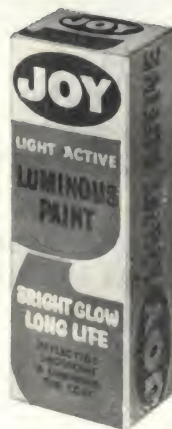
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magazine
FOR PLASTIC MODELLERS

October 1971

Editorial Offices:
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Volume 13 No 2

Editor: Chris Ellis

Cover Picture

More than thirty years after its service career started, the immortal Harvard is still in very widespread service with many of the world's air forces, possibly the oldest basic design still flying in the greatest numbers. One major user is the South African Air Force who employ the aircraft for training, target towing, and general utility work. It is also the main equipment of the reserve squadrons of the Citizen Air Force. The aircraft shown, actually a T-6G, belongs to No 5 Sqn based at Durban and it displays the latest B Type paint scheme applied to these machines. Though we gave extensive coverage to the Harvard in our July issue, South African machines were not included. This month and next Richard E. Gardner covers the different interesting colour schemes and variants used by the SAAF over the past 25 years. His first article is on page 76 in this issue.
(Photograph by Dave Becker).

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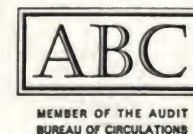
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- SAAB Viggen
- Washington's Army
- British Grenadiers
- Destroyer 'Rommel'
- RA-5C Vigilante

A TOPICAL release from Airfix is a brand new set of 59 pieces featuring the American astronauts on the lunar surface. The new set comprises 15 astronauts, a lunar roving vehicle, and a flying lunar excursion experimental platform which is intended to lift one astronaut so that he may hover over the lunar landscape. The figures are authentically moulded and each is depicted wearing NASA space suits and the portable life support systems, comprising back packs and chest-mounted remote control boxes. The back packs are separate mouldings. The figures are moulded in characteristic poses and several are shown carrying communications and seismographic equipment. Others have cameras or probes, while one holds the United States flag. This set goes with the Airfix LM in 1:72 scale and enables authentic lunar dioramas to be built up. Price of the set is 17p.

THE Airfix SAAB Viggen kit in 1:72 scale measures nearly 9 inches long with a wing span of 6 inches. The 67 part kit accurately reproduces the graceful lines of the fuselage and the 'double delta' wing configuration. Pre-moulded, white polystyrene parts clearly show all the airframe detail and particular care has

Destroyer Rommel is the latest Airfix 1:600 scale ship kit.



Saab 37 Viggen is complete with a full ordnance load.

been taken to accurately reproduce the jet intakes, exhaust and air brakes. The completed model can be displayed on a special stand provided with the kit and a full set of Swedish Air Force transfers is included together with painting instructions. This powerful fighter serves with both the Swedish and Danish air forces. Price of the kit is 33p.

A DESTROYER in current service with the West German Navy, the *Rommel* is the subject of a new Airfix scale model construction kit in 1:600 scale. The warship, which is based on the very potent and successful American 'Charles F. Adams' type, is one of three which have been commissioned by West Germany. Similar vessels serve with the United States Navy.

The completed Airfix model is 8½ inches long, with a wealth of deck detail including two fully automatic 12.7 cm rapid fire guns with totally enclosed turrets, the ASROC anti-submarine rocket, lifeboats, the latest Tartar guided missile system and a multiplicity of detection, communications and navigational equipment. Price of this fine kit is 24p.



Astronauts and full set of lunar equipment make an attractive accessory for the LM kit.

A NEW 40 piece set in OO/HO scale depicts some of Washington's troops as they appeared during the American War of Independence. All the figures are moulded in authentic uniform and can be painted for extra realism. The new set comprises officers and men and shows a standard bearer, a drummer, men carrying gunpowder, others standing, crawling and running with rifles at the ready, an officer on horseback and soldiers tending a wounded comrade. As opponents, Airfix have produced the British Grenadiers in the dress of the same 1770's period. Complete with the distinctive grenadier caps they are in assorted poses—firing, loading, kneeling and advancing. Others carry gunpowder, and a regimental colour. There are two mounted officers. Each of these sets costs 17p.

ONE of the most powerful and versatile attack and tactical reconnaissance aircraft in the world is a description well-deserved by North American Aviation's RA-5C Vigilante. This is the third version in the Vigilante series designed, engineered and built by NAA's Columbus Division. The Mach 2 twin-jet carrier-based aircraft is currently in service with the US Navy and has the capability of delivering conventional or nuclear weapons. The 76 piece kit includes the two crew figures and optional drop tanks. A set of US Navy transfers is included. To the usual 1:72 scale, this fine kit costs 50p.

Top right: British Grenadiers in OO/HO scale. Lower right: Washington's Army. Below: RA-5C Vigilante in 1:72 scale. Bottom right: The Japanese model and aviation magazine 'Aireview' predicted the shape of things to come in plastic kits—obviously with the Airfix 1:24 scale Spitfire in mind. Our 'anglicised' version of the cartoon is reproduced with acknowledgements. The original caption read 'The ultimate plastic Construction Kit—scale 1:1!'



Racing Jaguar

ATTRACTIVE E-TYPE KIT
CONVERSION

By Martin De'Ath

AROUND the circuit racing scene, Jaguar E-Types are quite a common sight in the more spectacular classes such as Sports, GT, and Formula Libre races, and are still very competitive despite the age of the design. They are one of the most impressive of the British cars taking part in these races, and the wide variety of teams using them allows for considerable scope in the finishing of the completed model. The conversion is a very simple one but is most effective in capturing the more aggressive appearance of the real-life conversion, and it will be a useful addition to the collection of many modern racing car fans. The Airfix Jaguar E-type kit is the basis of the conversion.

Stage 1—The Body. The first thing to do is to remove the bonnet from the rest of the body, carefully scoring round the moulded joint line until the parts separate. The engine I used was a V8 from an Aurora kit, though many of the full-size cars retain the straight-six Jaguar engine, so if you want to show engine detail the Jaguar 420 kit is a source of this. On my model, the larger engine necessitated the cutting of a hole in the bonnet to allow the carburettors and air cleaner to project into the open air. Engine detail adds a great deal of interest to any model,



Top: Completed model. Above: Model with bonnet removed to show new engine installation.

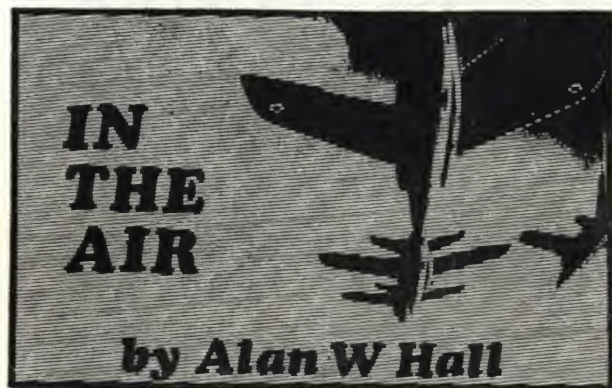
but if you want to keep the conversion really simple, the bonnet could be left on and no engine added. Next, the wheel arches have to be cut out to clear the wider racing wheels and tyres, which came from the Airfix Ford 3-Litre kit. You could make wider wheels from dowel or plastic card if desired, as the tyres do not need to carry any tread. When this is done, the wheel arches can be flared with 20 thou plastic card wide enough to cover the tyres. On some cars the air intake is enlarged, and on the model this can easily be done using a small half-round file.

Continued on page 69

NO 74 Squadron (the Tigers) disbanded on August 25 after more than four years' service with the Far East Air Force. The final task of the Squadron was to fly its Mach 2 Lightning S Mk 6 jet interceptors from Tengah, Singapore, to Akrotiri, Cyprus, where they were handed over to No 56 Squadron RAF. The Lightnings were refuelled in the air by Victor tankers of Strike Command during their 6,000 mile flight on which they staged to Gan, the RAF's remote island station in the Indian Ocean, and RAF Muharraq in the Persian Gulf. Each of the Lightnings was refuelled seven times in the air by the Victors and touched down at Akrotiri 13 hours after leaving Singapore.

At the disbandment parade held at Tengah before the Air Commander Far East Air Force, Air Vice-Marshal Nigel Maynard, four Lightnings did a fly-past as a general salute and a single Lightning flew over the parade at dusk as the Squadron's standard was marched off the parade ground for the last time. Other Lightnings were drawn up on the ground forming a backcloth to the parade in which RAF Regiment men of No 63 Squadron also took part. The first pair of Lightnings left Tengah on September 2 for Akrotiri.

During their stay with FEAF, No 74's aircraft have shared Tengah's 9,000 ft long runway with Hunters and Strikemasters



of Singapore's new but growing Air Force. The Tiger pilots have been taking part in Air Defence competitions designed to improve standards of co-ordination between pilots and Air Defence controllers of the Singapore Armed Forces who direct their sorties from Bukit Gombak Air Defence Centre.

During the 1970's five Nation exercise 'Bersatu Padu', 74's Lightnings joined in Air Defence exercises over West Malaysia and Singapore. Regularly throughout their stay at Tengah the Tiger Squadron have flown detachments to RAF Butterworth in Western Malaysia while the Australians' Mirage jets have made reciprocal training flights to Tengah.

It was in June 1967 that the Tigers flew out to Singapore from RAF Leuchars in Scotland, helping to make history with what was the longest air-to-air refuelling operation carried out by Victor tankers. Since then the Lightnings have on three occasions made 2,000-mile non-stop flights between Singapore and Australia air-to-air refuelled by the Victors. A pair of 74's Lightnings also flew to Thailand to take part in a static SEATO display in Bangkok.

No 56 Squadron will be taking over the F Mk 6 Lightnings of No 74 Squadron at Akrotiri, Cyprus, and giving up their Mark 3s. In this photograph, taken at Lakenheath six years ago, one of 56's Lightnings shows the effective red and white scheme which adorned their aircraft at the time.



Three changes in ten years. No 74 Squadron which has recently disbanded at Tengah, Singapore, was the first to receive the Lightning at RAF Coltishall, Norfolk, in 1961. Later they received F Mk 3s and before going to the Far East were equipped with the F Mk 6. These three photographs show the changes of markings during the period and in particular the colourful Mk 3 which had an all black thin and fuselage spine.

No 74 was the first Squadron in the RAF to equip with the Lightning interceptor and as the photographs on this page show, had, during their history, changed the markings quite considerably.

No 56 Squadron has been at Akrotiri since May 1967, equipped with Lightning Mk 3. The Squadron was transferred from Strike Command a month before No 74 were similarly deployed to the Far East. Its present role is to provide air defence for the British Sovereign Base areas and the re-equipment with Lightning Mk 6s with their greater fuel capacity and endurance will improve its operational capability.

Kingfisher rebuilt

DURING 1942, when the US Navy badly needed aircraft for its Aleutian campaign, a Squadron of OS2U-3 Kingfishers were despatched to Dutch Harbour, Alaska. Amongst these was an aircraft flown by Ensign Mac J. Roebuck and Radioman/Gunner Stanley S. Goddard. Unfortunately they did not reach their destination as the aircraft they were flying hit the 3,325 ft slopes of Mount Buxton whilst flying in fog en route. Mount Buxton is on the barren, uninhabited Calver Island in British Columbia, nearly half-way between Vancouver and Alaska. The accident occurred about an hour after take-off and Kingfisher was badly damaged in the crash. Luckily it landed in an area covered with brush and small trees and both of the aircrew managed to survive. They walked away from the battered aircraft unscathed, although the plane was nearly demolished. Both the wing and the float were torn off, the tail unit damaged and the engine beyond repair.

But that was not the end of the story, for today that same Kingfisher is part of a memorial on board the battleship USS North Carolina, now permanently berthed at Wilmington, North Carolina.

The wreckage was rediscovered in 1963 and the Air Museum

AIRFIX magazine

of Canada in Calgary, Alberta, heard of it and suggested to Canadian authorities that it might be worth salvaging. Mr Paul Hellyer, Canadian Minister of National Defence, took up the idea and suggested that it might be valuable practice for members of the Sea Island Search and Rescue Flight which was based in the area. With official permission given, a H-21 helicopter, with the battered remains of the Kingfisher slung underneath it, lifted the valuable find out of 2 ft of snow to Port Hardy on the North Coast of Vancouver Island, just a few miles north of the place where the Kingfisher had left on that fateful day in 1942.

From Port Hardy a Hercules transport ferried the wreckage to the Air Museum's Headquarters in Calgary. Five years later the wreckage arrived by sealed van at Wilmington, the site of the permanent berth of the USS North Carolina, and was stored for safe keeping at the new Hanover County Airport.

At this point, Vought Aeronautics in Dallas, Texas, the company that had taken over from the original firm who built Kingfishers during the war, came into the picture. Following a period of negotiation, Vought's agreed to undertake the restoration and the work was delegated to members of Vought's Quarter Century Club, who were retired employees but who came back to work on the same type of aircraft which they knew well during the war. Twelve of the retired members took part in the work, much of which had to be done by hand because of the absence of mass-produced machine-made parts. A new right wing was built and almost the whole of the main float was reconstructed. Two non-existent wing floats were also made and the control surfaces were re-covered with fabric. Finally, a perfect paint job was done simulating the markings of a Kingfisher serving on board the North Carolina when the battleship was operational.

Canadian Sea Fury

A GOOD friend of mine, who is a Chief Petty Officer serving with No 845 Squadron Fleet Air Arm, recently sent me the rare photograph of the Canadian Sea Fury illustrated on this page. It is rare in the fact that the fuselage and top wing roundels were of the C Type variety but with the Canadian Mapleleaf added to the centres.

The photograph was taken early in 1948 at Culdrose, when the Sea Fury Receipt and Despatch Unit was stationed there. At the time, aircraft of this type were being sent to front line squadrons without squadron markings, but in the case of No 803 Squadron, these were applied at Culdrose. No 803 Squadron was part of the 19th Carrier Air Group and had 25 aircraft on strength; all except one of these were coded BC-A to BC-Z minus O and I. The odd man out was coded GC-B and, as far as was known at that time, belonged to the Commander of the 19th Carrier Air Group and followed the wartime RAF tradition of the pilot's initials. All codes were in gloss white.

All the Sea Furys were camouflaged in the pre-1947 colour scheme of dark sea grey on the under surfaces, right down the fuselage sides, and sky underneath. All colours were gloss and the roundels on the fuselage sides were standard C1, apart from

Racing Jaguar—from page 67

Stage 2—The Chassis. If engine detail is added, the chassis may have to be modified to clear such parts as the bellhousing and gearbox. The wheels fit straight on to the stub axles as in the kit instructions.

Stage 3—The Interior. This is assembled as in the kit instructions, with the addition of seat belts, roll bar from stretched and bent sprue, and a smaller steering wheel such as that in the Ford 3-Litre kit. If desired, the passenger seat can be omitted. The interior should be finished in either aluminium (silver) or matt black.

Stage 4—Finishing. The colours are really up to you, and ideas can be obtained from the colour illustrations in motor racing magazines. My model is finished in red with blue wheel arches and roof. Small details such as petrol filler caps, wing mirrors, and rear window stays are picked out in silver, and the headlamps are 'taped' over. This can be done simply by painting thin lines over the glass, or pre-painted strips of Sellotape can be stuck on to give the model a realistic final touch.

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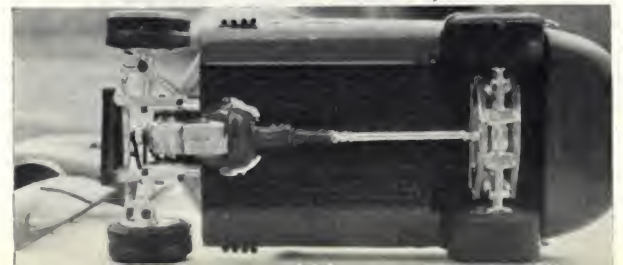
Top to bottom: Now preserved as part of the Battleship Memorial on board the USS North Carolina, is this OS2U-3 Kingfisher. Canadian Sea Fury of No 803 Squadron with the Canadian Mapleleaf insignia on a C Type roundel (Photo R. Kentsbeer). This veteran Tiger Moth doing a 'crazy flying' act at the Culdrose Naval Air Day must be one of the oldest British service aircraft. T8191 was built in 1940 at Cowley and is now attached to the Station Flight at Culdrose.

the blue Mapleleaf centre. Upper wing roundels were treated in the same manner but those under the wings were the normal type without the Mapleleaf.

Sea Furys allocated to No 803 Squadron were in the PF900 series and early TG100 series. All serials were in black and BC-F was serialised TF996. Sea Furys of this unit were also unusual, in the fact that they were the only Fleet Air Arm aircraft post war to use letters instead of numbers as side codes. All of the Squadron's aircraft eventually left Culdrose to go to Eglinton, Northern Ireland, where the squadron personnel took them over.



Two more views show constructional features.



AMERICAN HALF-TRACKS



by Peter Chamberlain

Part 5: Miscellaneous types

THE final half-track type was the mortar carrier of which several different models were developed as direct derivatives from the personnel carriers. In chronological terms these come before the gun carriages but for space reasons they've been left to last in this series.

Half-Track, 81 mm Mortar Carrier, M4: Based on the Half-Track Car, M2, this vehicle provided for the transport of the 81 mm Mortar with crew and ammunition. No provision was made for firing the mortar from the vehicle, save in extreme emergencies. Built by White, it was standardised in October 1940, and production was terminated in 1942 with a total of 572 built.

Half-Track, 81 mm Mortar Carrier, M4A1: This was generally similar to the Half-Track, 81 mm Mortar Carrier, M4, with modifications to permit the weapon to be placed in action with greater rapidity. The mortar could be traversed 600 mils (the M4, 130 mils). It could also be fired from the vehicle. Built by White, this vehicle was standardised in December 1942, a total of 600 vehicles being accepted.

Half-Track, 81 mm Mortar Carrier, M21 (T19): Deficiencies in the 81 mm Mortar Carrier M4 resulted in the development of a new mortar carrier based on the Half-Track Personnel Carrier, M3, with winch. This model, the T19, was modified to allow the mortar to fire from the vehicle to the front, with provision for removal for firing from the ground. Standardised in July 1943 as the M21, a total of 110 were built by White. A pedestal mount



Top: 81 mm Mortar Carrier M4A1. Above: 81 mm Mortar Carrier M21. Note front winch on M21 and roller on M4A1.

was provided for a cal .50 machine gun and a two-way radio was carried. Crew was six men and weight 18,500 lb (gross). All other details were as for Half-Track Personnel Carrier, M3.

4.2 inch Mortar Carrier, T21: Development of this weapon was begun in December 1942, to provide for installation of the standard 4.2 inch Chemical Mortar on the Half-Track Personnel Carrier, M3. Similar to the 81 mm Mortar Carrier, M4, the mortar was mounted to fire to the rear. A pilot model of the T21 was built and sent for trials, the results of which were satisfactory except for certain weaknesses in the mortar base installation. A M49 gun mount was fitted over the co-driver's seat, for a cal .50 machine gun.

4.2 inch Mortar Carrier, T21E1: After the testing of the T21, the military characteristics were revised to include the 4.2 inch mortar firing to the front of the vehicle and with certain changes in the stowage and machine gun mounts. A pilot model incorporating these changes was tested. The project was later dropped in favour of mounting the 4.2 inch mortar on a full track vehicle. A pedestal mount was fitted at the rear for a cal .50 machine gun.

Weight was 20,000 lb (gross) and crew five. Other details as for Half-Track Personnel Carrier M3.

Half-Track Trucks

Lastly comes a group of vehicles which were initiated as replacements for the M3/M9 designs and their derivatives. These were the Half-Track Trucks, totally new designs. However, the US Army's decision to switch entirely to tracked vehicles for the armoured divisions led to a premature end for the development programme.

Half-Track Truck, T16: This was a project to develop a prime mover for light artillery weapons and to transport personnel, ammunition and miscellaneous cargo pertaining to the section. The first pilot was completed by Diamond T Motor Company in March 1943 and the second in June 1943. The project was discontinued due to the cancellation of the military requirement. Pedestal mount was fitted for cal. 50 MG. Weight, 30,010 lb (gross); Crew, 14; Armour $\frac{1}{2}$ inch; Length, 20 ft 7 $\frac{1}{2}$ ins; Height, 7 ft 10 ins; Width, 7 ft 10 ins. Engine, Hercules R.X.LD, 6-cylinder, 174 hp; Speed, 35 mph; Range, 200 miles.

Half-Track Truck, T17: Developed to provide a prime mover and carrier for the artillery as an alternative design to the Half-Track Truck, T16. One pilot model was built by Autocar Company in June 1943, and one by the White Motor Company in August 1943. Fitted with the M49 ring mount for the cal .50 MG. Project discontinued due to lack of military requirements. Weight, 30,761 lb (gross); Crew, 14; Armour, $\frac{1}{2}$ inch (front, sides, rear); Length, 20 ft 4 $\frac{1}{2}$ ins; Height, 7 ft 6 $\frac{1}{2}$ ins; Width, 8 ft 6 $\frac{1}{2}$ ins; Engine, White Model 24, 12 cylinder, 210 hp; Speed, 37 mph; Range, 150 miles.

Half-Track Truck, T19: Designed and developed as a second alternative to the Half-Track Truck T16. Two pilot models were built by the Mack Manufacturing Corporation. The first pilot was completed in November 1942, the second in April 1943. Then the project was discontinued: 40 rounds of 105 mm howitzer were carried in this model. Weight, 28,800 lb (gross); Crew, 14; Armour, $\frac{1}{2}$ inch (front, sides, rear); Length, 20 ft 6 $\frac{1}{2}$ ins; Height, 7 ft 2 ins; Width, 8 ft 5 ins; Engine, Continental, Model R6572, 6 cylinder, 215 hp; Speed 37.7 mph; Range, 115 miles.

Post-war Service

In post-war years the half-tracks soldiered on, more widely used in fact than they had been during the war, despite the fact that all production of new vehicles actually ceased well before the end of World War 2. Hundreds of surplus stored vehicles were disposed of by America to friendly nations and the NATO states. Mainly these were personnel carrier models, but the M16 and M17 Multiple Gun Motor Carriages were also in wide use. In fact, the half-tracks have had a longer continuous service life than any other American vehicle of the war years, for even most of the original Jeeps have now been replaced by later models. Not so the half-track, however. Even in 1971 it was still in service with NATO armies and over the years it has been standard equipment in Spain, France, Italy, Japan, Britain, the Philippines, Cambodia, and Greece, to mention just a short list of main users. British developed versions in post-war years were a command vehicle, with hard-top added, used mainly at brigade level



Top: Half-track Truck T16. Above: Half-track Truck T17 (all photos US Official and/or courtesy Col R. J. Icks).

until the early 1960s, and a REME recovery model with front-mounted jib and winch and workshop facilities in the back. Even in 1971 a few of these vehicles remained in British service, mainly because they had a higher vertical lift capability than the vehicles designed to replace them, ie, the repair and recovery version of the standard tracked carrier.

The major users of the American half-track in post-war years were, of course, the Israelis, for whom it became the standard armoured division vehicle used extensively by the mechanised infantry. Hundreds of half-tracks of various models were acquired from nations disposing of their unwanted vehicles and these were extensively rebuilt in Israel. In fact, Israel has a depot devoted exclusively to reconditioning half-tracks and it is believed that at one time they gave serious consideration to putting their own version of the design into production in Israel. Most Israeli half-tracks have a Browning machine gun added in the co-driver's position, and some have hard-tops added, mainly, it is believed, on command vehicles. Another Israeli variant has French SS-11 anti-tank missiles on launchers in the rear compartment. The American half-track vehicles thus look certain of staying in first-line service for some years to come, undoubtedly setting the record, already 30 years, for the longest-lived of all basic military designs to remain in such wide use.

Summary of early half-track development models

Designation	Year	Remarks
Citroen-Kegresse Tractor P-17	1930	Same as French Army vehicle.
Half-Track Car, T1	1931	Built by J. Cunningham, Son and Co.
Half-Track Car, T1E1	1933	Rebuilt T1; 30 made at Rock Island Arsenal.
Half-Track Car, T1E2	1933	Rebuilt T1; rubber jointed track.
Half-Track Car, T1E3	1935	Rebuilt T1E2, with volute springs.
Half-Track Car, T2		Design Study Only.
Half-Track Truck, T1	1933	GMC 2 $\frac{1}{2}$ ton trucks with half-track unit from T1E2 and rubber band track. Six more ordered then cancelled.
Half-Track Truck, T2	1933	Cunningham 1 $\frac{1}{2}$ ton truck (Ford 1 $\frac{1}{2}$ ton truck with Cunningham half-track unit similar to that on T1E1); later with Cunningham Oilite Bushed Track.
Cunningham-Chevrolet Half-Track Truck	1933	Chevrolet 1 ton truck with Cunningham needle bearing track of rubber blocks.
Half-Track Truck, T3	1933	Linn WD 12 Tractor with engine replaced by American La France 12 cylinder engine.
Half-Track Truck, T4	1934	GMC truck with Cunningham unit similar to Half-Track Truck, T1.

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Half-Track Truck, T4E1		Specification only, for Signal Corps wire laying truck.
Half-Track Truck, T5	1935	GMC built. Similar to Half-Track Truck T1. Originally 8 inch track later 10 inch; 24 built.
Half-Track Truck, T5E1	1935	T5 modified, with rear axle reduction ratio increased.
Half-Track Truck, T5E2	1938	T5E1 with 10 inch track and larger bogie wheels; Cunningham rubber block track.
Half-Track Truck, T6	1934	Linn; smaller than Half-Track Truck T3 cancelled after one made.
Half-Track Truck, T7		Specification only for medium artillery prime mover.
Half-Track Truck, T8	1935	1935 Ford 1 $\frac{1}{2}$ ton truck with Trackson cable track unit. Failed military tests.
Half-Track Truck, T9	1936	1936 Ford with volute spring half-track unit and Marmon-Herrington front wheel unit, 4 bogie wheel unit and T21 tracks (Rubber block rubber bushed).
Half-Track Truck, T9E1	1936	Same with two wheeled bogie and T20E2 track.
Production, T9	1937	Same but 1937 Ford chassis and rubber band tracks T24E1. Two built.
Production, T9E1	1937	Same but 1937 Ford chassis and T24E1 track.
Half-Track Truck, T9E2	1935	Pilot T9E1 with pneumatic tyred bogie wheels. Returned to original form after tests.
Half-Track Truck, T10		Specification only, Light half-track wire-laying truck.
Half-Track Truck, T16		Diamond T made prime mover for 105 mm Howitzer.
Half-Track Truck, T17		White made.
Half-Track Truck, T17 Modified		Cupola added.
Half-Track Truck, T19		Built by Mack, engine at rear.
3-Track Truck, T3		Built by Mack.



Top: Command vehicle conversion of M3A1 Half-track in post-war British service with soft top. Above: Command vehicle with built-up hard top. A further version had a rounded hard top. Below: 57 mm Gun Motor Carriage T48.

This concludes the coverage of the half-track story but next month we feature a pictorial postscript on half-track variants and start a new short series on the Scorpion AFV family.



Panzerkampfwagen IV Ausf D and J

CONVERSIONS FROM THE
AIRFIX KIT

By Gerald Scarborough

THE release of the new Airfix Panzerkampfwagen IV Ausf F1 and F2 presents modellers with an ideal base for a multitude of conversions. The chassis was used from 1939 to 1945 in various marks of tank and also served as the basis for self-propelled artillery and tank destroyers. Last month, T. J. Gander demonstrated one of the latter, the PzJg IV.

The kit itself makes up into an excellent replica of the Pz IV Ausf F and I first made up the F2 long-barrelled 7.5 cm gun version to see if there were any snags in construction. I first gave all parts, especially the tracks, a good wash and brush-up in soapy water to remove any oil from the mould and then followed the kit instructions to the letter. The only parts that seem to need watching are the spare wheel carrier (part 80), in which my 'spares' refused to fit, and the tracks, which were too long and are also difficult to get in place at stage 6 of the instructions. I also had to ease out a groove on the insides of parts 38 and 9, the side pieces, to allow the bottom, part 81, to fit up flush.

For the other versions I have made, I first assembled the suspension as kit instructions I, then cemented these to the bottom (part 81) and the back (part 82), placing the top (parts 79 and 78) in place, holding all together with elastic bands until set. After painting all the suspension in the chosen colour scheme, I removed the top and fitted the shortened tracks. Although the new 'black' track is better detailed than the old style it does require careful painting before assembly to the running gear, and for this I mostly

use a 'rusty' colour paint mix as the base for European theatre with a silvery grey finish for North Africa embellished with mud, snow or sand dust accordingly.

Panzerkampfwagen IV Ausf J

This was fitted with an L/48 gun, slightly longer than the L/43 of the F2. Skirt plates 5 mm thick were hung from rails at the sides and 8 mm plates were used to protect the turret against hollow charge projectiles. Some versions were fitted with mesh aprons (Schurzen) instead of the plates and were equipped with 'ostkette' (East tracks) developed for use on mud or snow on the Russian front.

Construction of the hull is as for the Ausf F, substituting tracks from a StuG III if you wish to have your model on 'ostkette'. These tracks will have to be butt joined using staples or by stitching, and will need slight stretching to get them on. The only other alteration to the hull is to construct two simple exhaust pipes as in the drawing; only one lamp appears to have been fitted, this to the left side, so fill the locating hole on the right. Note also the position of the aerial to the left rear corner of the engine decking.

Turret: Carve away the vision block to the right side of the turret front (part 66), also those on each of the turret sides in front of the access doors. The gun barrel is cut from a Panther spare, using part of the F2 gun (part 64) and mantlet (part 65). The cupola hatch is a solid disc, not the split type, and for this I used 'half' of a 'spare' roadwheel (part 95 or 97), though this could, of course, be cut from plastic card. Incidentally, the

cupola should be just a fraction further forward on the turret and this can be done easily by removing the locating rim or carving out to the front of the hole. The additional turret armour is from 10 thou plastic card with brackets made from Microstrip, as also are the door hinges. This armour was a standard fitting on the Ausf J and was also fitted to earlier models as they came in for repair and refurbishing.

Schurzen: The 'apron' armour can be made from either 10 thou plastic card or, if available, copper mesh, either type being fitted. On the model these are hung from plastic rod attached to Microstrip brackets as on the drawing and the method used was first to attach the rod to small lengths of Microstrip cemented to the mesh. The brackets were attached to the hull top and spacers to hold the mesh from the running gear were fixed to the track covers. When dry the complete apron, together with rod, was cemented to the brackets.

The model was first painted in Humbrol Panzer Grey as construction progressed and a final coat of white 'snow' camouflage was added when construction was complete. Finally, this was streaked and splashed with 'mud' and grime.

Panzerkampfwagen Ausf D

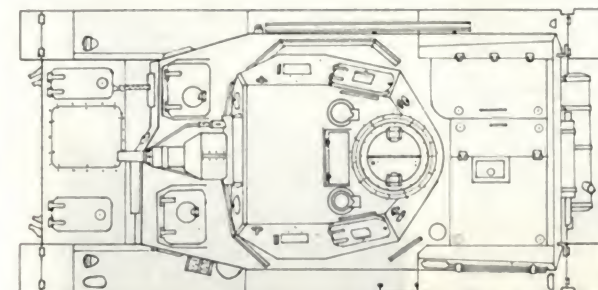
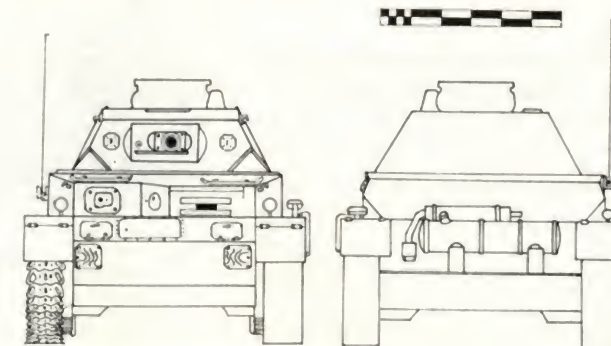
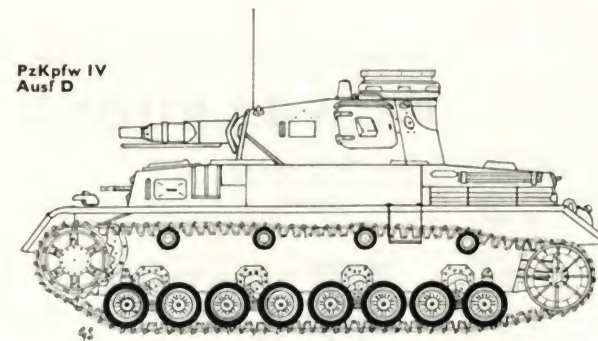
To convert the Airfix kit of the Panzer IV F1 into the earlier Ausf D as used in the Polish and French campaigns requires alterations of detail and a new hull machine gun position and mounting. I will go through these in the order of the kit instructions but refer to the drawing.

Continued on page 74



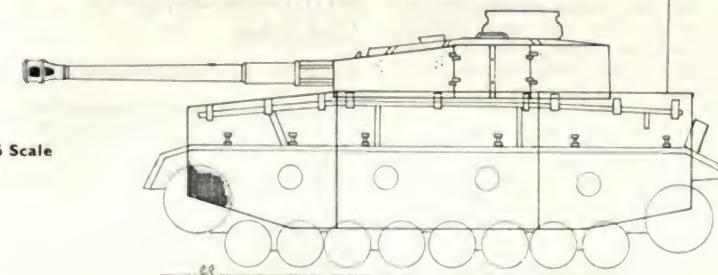
Above: A PzKpfw IV Ausf J of SS-Pz Div 'Adolf Hitler' in Northern Italy. Vehicle appears to be sand-yellow camouflaged over with green and red-brown stripes. '618' is black with white outline.

PzKpfw IV
Ausf D

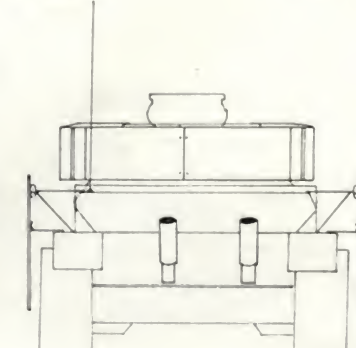
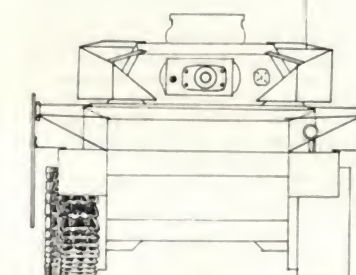
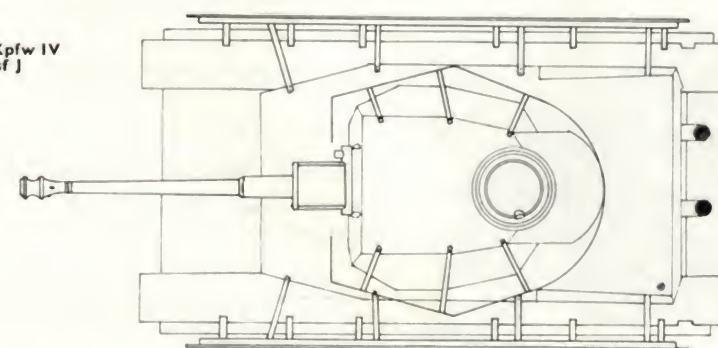


Above: Top view of the model shows very clearly the hull, turret and suspension changes needed for the Ausf D. Compare with drawing. Left: Tail end treatments compared. Original Ausf F2 (with added detail) is in the centre flanked by the Ausf D and Ausf J. The new simple exhaust system of the Ausf J must be noted.

1:76 Scale



PzKpfw IV
Ausf J



Below: Views of the completed conversions featuring all the changes described here. Note effective use of wire gauze for the Ausf J side skirts. Crewmen are converted from truck drivers and Bloodhound kit items.



PzKpfw IV—continued

ings at each stage for confirmation of each point.

Section 1: Remove all but the extreme front and rear limit stops to the suspension moulded on parts 9 and 38. Thin down the spokes to the idlers (parts 29 and 58) to represent the early style. Add a 4 mm dia disc of 30 thou plastic card to the sprocket centres (parts 27 and 56).

Section 2: Cut off the corners of the gun barrel mount (part 63) to the plan-form on the drawing and drill out the barrel end (part 62). Carve off the ventilator on the front top of part 68 and fill the locating hole in the back for part 71 which will not be used. Make new access doors with hinges from slivers of Microstrip and stretched sprue, also the shield over the doors from stretched sprue. If you wish to show these access doors open, then open out the locating 'squares' on part 68 to leave a larger access aperture. Add the lifting hooks, pistol ports, etc, from scrap and sprue all as shown in the drawings.

Section 3: Carve off the locations for the spare track shoes on part 81. Remove the ventilator cowlings and hinges from the final drive access panels and fit new hinges from Microstrip on part 79. Fill the locating holes for part 80 which is not used. Remove the engine hatch grilles from part 78 and smooth off but take care to preserve the hinge detail. Cut across in front of the hull machine gunner's hatch and at the angle as shown on the drawing and fit a new angled face from 10 or 15 thou plastic card and cut down part 75 to fit.

Section 4: Cut away the locations for parts 88 and 83 on the hull rear (part 82). Fit part 85 and if you have a spare part 85, fit this in place of part 84 or alternatively alter this part to suit. Make up a larger spare fuel tank from two sets of parts 86 and 87 or build from sprue. Note the filler position. Make up an exhaust system from scrap and sprue, etc, as shown on the drawing.

Section 5: Fit a new 'square' hull machine gun mount to the new face and

Above: Top view of the Ausf D in scenic setting with peasant woman watching it pass, characteristic of 1940-41 scenes. Below: Top view of the Ausf J shows clearly the supports for the side skirts for both hull and turret.



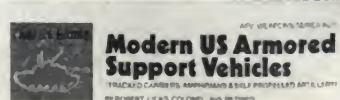
a double shutter type of driver's visor in place of part 90. Cut away the 'track' from part 89 and just fit the two towing points. Fit headlights (part 93) and a spare from another kit to the location of part 92, putting this part 92 outboard of the new light. Add the channel to take the retracted rod aerial to the right side of the hull and the step to the left side of the trackcover, all as shown on the drawings. Any hatches that are left open, as on my model, will have to be thinned down by removing the locating portions and filing flat.

This model is finished in early Panzer Grey, the crew from various Airfix airfield service sets were duly carved and chopped, and the French peasant woman was 'borrowed' from my son's Tarzan figures. There are some useful figures, also, in the new Minitanks sets reviewed last month.

Below: Badly battered PzKpfw Ausf IV D in the desert in 1941. The distinctive 'stepped' superstructure front is just visible. Partly obliterated number is 821 with very faint white outline (Imperial War Museum).



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BOOKS for modellers

Unless otherwise stated, books reviewed are normally available from your local bookshop or from hobby shops which sell books for enthusiasts, including the mail order stockists advertising in this magazine. As a last resort they can be obtained from the publishers whose addresses are given when known. In all cases of mail order, however, suitable postage should be added to the selling prices quoted.

MILITARY

Borodino 1812.

E. R. Holmes.

Saratoga 1777.

John Sweetman.

First Bull Run 1861.

Peter Davis and H. John Cooper.

Charles Knight & Co Ltd.

11-12 Bury Street, London EC3.

90p each.

A NEW series of books under the title 'Knight's Battles for Wargamers', these are neatly produced volumes intended as a guide for anyone engaged at wargaming in specific periods. Each book includes battle maps and the first two titles contain straightforward accounts of the battles concerned. In these, despite the series title, the only real reference to wargaming is in a brief introduction by Brigadier Peter Young—the same in each book. By far the best is the third book which really lives up to its claims in that it has appendices detailing the weapons, the uniforms, and suggested model figures for re-enacting Bull Run in miniature. There is then a good section showing how to set up the game, complete with suggested moves. Clearly this latter book has authors who know something about wargaming rather than just a knowledge of the actual events. For choice then (and best value for money) the discerning wargamer will find the third book the wisest buy of the three.

AFV Profile No 35: British ARVs and Transporters.

Profile Publications Ltd, Coburg House, Sheet Street, Windsor.

35p.

A COMBINED effort by Peter Chamberlain and Major General Duncan, this Profile covers some assorted types very succinctly and with good pictures of some military rarities. Wheel-cum-track tanks are included and the book makes a useful addition to the military enthusiast's library.

Military Vehicle Data No 7.

Bellona Military Vehicle Prints No 25.

MAP Ltd, 13-35 Bridge Street,

Hemel Hempstead, Herts.

25p each.

LATEST in their respective series, these two publications follow the well-known Bellona format with scale drawings, pictures, and historical notes. The military vehicle book covers nine types including the Austin K3, AEC Refueller, and Bedford QL Portee, so it's a really useful purchase for anyone making models or converting from the relevant Airfix kits. The latest set of Bellona prints is equally useful, covering

October 1971

the T-34/76A, Churchill Bridgelayer, and T18E2 armoured car (the Boarhound). Both 1:48 and 1:76 scale drawings are included for the two tanks, ideal for kit converters with either the Airfix or Aurora Churchill models.

German Infantry, 1914-1918.

David Nash.

Almark Publishing Co Ltd, 104-106

Watling Avenue, Edgware, Middx.

£1 (paperback); £1.50 (hardback).

WRITTEN by a well-known expert on the subject, this book is a companion volume to an earlier Almark book, *German Artillery* (just reprinted), and covers in great detail the organisation, order of battle, uniforms, equipment, and weapons of the German infantry regiments in World War I. The book is very nicely produced with some fine old photographs, detailed text, and eight pages of colour illustrations which give all variations of uniform style, in both parade and field service orders. Some of the colour pictures are contemporary prints of the 1914 period. This should be a useful reference aid to all model soldier enthusiasts interested in the World War I period.

Battle Dress.

Frederick Wilkinson.

Guinness Signatures, 2 Cecil Court,

London Road, Enfield, Middx.

£4.20.

THIS very lavishly produced volume of over 260 pages is sub-titled 'A Gallery of Military Style and Ornament' and consists essentially of a series of essays, or 'signatures' as the publishers call them, which give a broad general history of the development of military uniform. The 17 sections range from the 'ancient' period, through medieval armour, up to uniforms of World War 2. Special chapters are devoted to collecting



Reader Pierluigi Moncalvo of Turin, Italy, sent us this picture of the PZL P23 Karas produced to 1:72 scale by the Polish firm of Ruch. While somewhat crude it can be worked up to an accurate and pleasing model as the photograph shows. It is not available outside Eastern Europe but should be obtainable privately via pen-friends in Poland or Czechoslovakia.

uniforms and such specialist subjects as badges and buckles. Obviously, even in a book of this size, coverage of the whole field of uniforms can only be fairly generalised and the book is mainly intended as a guide for beginners or those wishing to collect uniforms. The colour pictures are superb and these are amply supported by a good selection of drawings and half-tone pictures, all very nicely reproduced.

Guns: an Illustrated History of Artillery.

J. Jobé (editor).

Patrick Stephens Ltd, 9 Ely Place,

London EC1.

£9.80.

A LARGE format 'coffee table' style book, this interesting volume is definitely in the luxury class with handsome binding, fine paper, and dozens of colour plates hand-mounted on the page in the old traditional style. It is written by a consortium of experts who each cover different periods from the earliest days of bombardiers up to the 'atomic cannon'. There are dozens of pictures, many new to us—even a mounted RHA gun team in battledress in November 1939!—and the book gives a good overall history of the development of artillery. A useful 'catalogue' of principal types is included and the book is packed with facts and figures and some nice action pictures.

AIRCRAFT

Military Aircraft, 1939-1945.

Roy Cross.

Hugh Evelyn Ltd, Fitzroy Square,

London WC1.

£3.50.

THIS is the latest volume in the well-known Hugh Evelyn print series where the emphasis is on luxurious colour plates. Recently the format has been changed to the more normal book shape and there is now much more text, plus supporting illustrations, as well as the colour plates themselves. Artist Roy Cross takes a number of well-known types and gives a potted history of each with, in most cases, cut-away drawings, and a selection of pictures. Of interest are a few maker's GA drawings reproduced on a small scale. The colour plates, though exhibiting fine draughtsmanship, have suffered somewhat in the printing process it seems. Thus the matt blacks of a Wellington and Lancaster, for instance, have come out a curious ultramarine blue shade. A pale grey seems to have been used for any area depicting grey, Sky, silver, or similar light shades. Hence, anyone used to the colour reproduction in such publications as Profiles or Osprey will find the colour work here distinctly below accepted standards. This is a pity for otherwise this is a handsomely produced book.

Polish Aircraft 1893-1939.

Jerzy B. Cynk.

Putnam and Co Ltd, 9 Bow Street,

London WC2E 7AL.

£7.50.

IN the inter-war years the Polish aircraft industry was one of the most progressive and advanced in the world, being a leading exponent of all-metal structures, cannon-armed monoplane fighters, V-tailed aircraft, high-lift STOL aircraft and ultra-light machines. This

Continued on page 105

Harvards of the SAAF

RICHARD E. GARDNER DRAWS AND DESCRIBES THE COLOURFUL PAINT SCHEMES OF THESE VETERAN MACHINES

Pictures by Richard E. Gardner and Dave Becker

DURING the Second World War about 650 North American AT-6 Harvards were used by the South African Air Force for pilot training under the Commonwealth Joint Air Training Scheme. After the war the great majority of these remained in service at the Central Flying School and with the reserve Active Citizen Force (Nos 4, 5, 6, 7, 8, 40, 41, ACF Squadrons). It is believed that 300 were still in service (and in storage) until recently, when the Atlas-built Impala jets started to re-equip the Citizen Air Force units. Even today, however, there are many Harvards still in use as trainers, reconnaissance and COIN aircraft. Current strength includes a number of T-6Gs of post-war origin, differing in minor details from the Harvard proper.

The Airfix Harvard kit lends itself to many colourful SAAF finishes and in this article several post-war schemes are illustrated. Detail variations, such as D/F loop containers, rocket rails, whip aerials, etc, can be added by raiding the spares box (or salvaging ancient models) and heat-stretching plastic sprue.

Demarcation lines are best marked off with tape to obtain fine, clean, colour divisions. One point is worth noting. Never paint over silver paint. The property of the silver is such that it will nearly always mix with the overlaid paint. Dayglo colour is obtainable in Humbrol tinlets, but must be used over an undercoat of matt white. As an alternative, dayglo-coloured adhesive tapes are available from most drawing-office/art suppliers and come in a useful variety of widths. If carefully applied these tapes can be most realistic, especially when cut into panel-sized pieces.

Most aluminium paints (such as the Humbrol variety) are far too bright. If small parts of matt white or light grey are added, a better finish will be achieved.

Transfers pose a greater problem. The early 'Springbok in roundel' designs can be produced from Almark RAF roundels by omitting the red centre and substituting a hand-painted orange 'bok'. (This is quite an easy shape to paint.) At the moment there are no commercially available 'castle' markings in the UK (although a sheet is produced in the Republic), and modellers will have to hand-paint these items. Using white sheet transfer, such as that produced in the ABT range (available from BMW Models of Wimbledon) it is possible to prick out the pattern by placing the transfer sheet under the drawing page; the full pattern can then be drawn out on the transfer sheet and the colours painted in. The pattern is then cut out with scissors—allowing for the white border and the transfers can be applied in the normal way. Serials should present no problems as suitable numerals can be found on many kit transfer sheets and specialist sheets produced by Stoppel of Denmark. The black-outlined yellow panels can be reproduced by utilising panels of solid colour, the yellow panel being slightly smaller all round and laid on top of the black-panel.

With kits of the Harvard, Avro 504, DH4, Demon, Hurricane, Spitfire, Kittyhawk, Hudson, Mosquito, Boston, Dakota, Hercules, Sabre, Mustang, Tiger Moth, Mirage, Shackleton (and soon a Buccaneer S2), plus others, the SAAF could provide subjects for an unusual and interesting model collection.

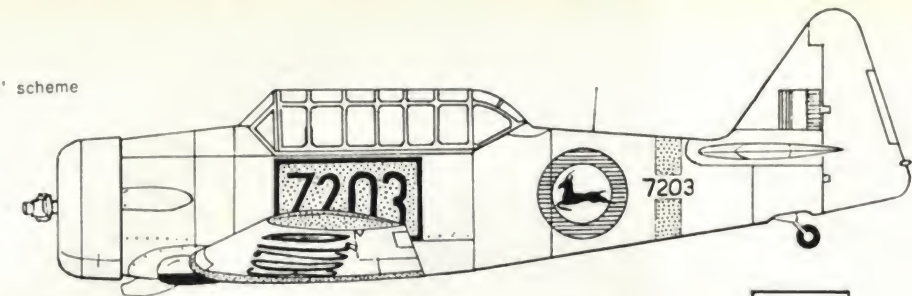


Above: Two views of 7231 of No 5 (Citizen Air Force) Sqn pictured earlier this year at Durban, showing the current colour scheme as also shown on this month's cover. Only the panel immediately ahead of the cockpit is dark green on this particular aircraft. Rocket rails are fitted and some of the maintenance stencils are painted on white backgrounds, while the squadron badge is on a shiny metal background.
Below: A Mk 2A of No 6 Sqn showing the standard positioning for the serials under the wing.



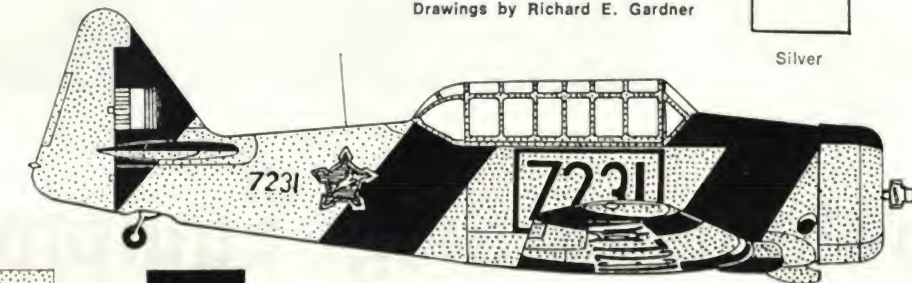
AIRFIX magazine

Old Type 'A' scheme



Drawings by Richard E. Gardner

Silver



Harvard 2A Target Tug



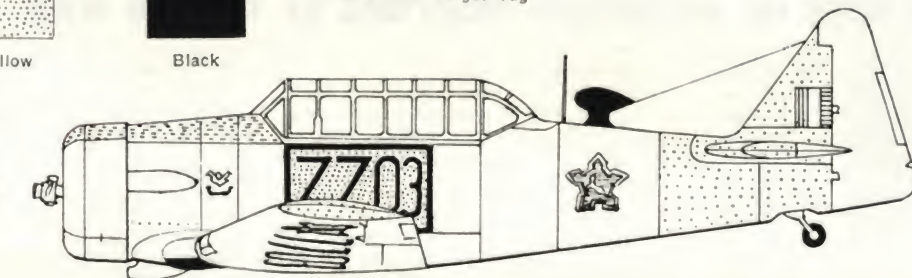
Yellow



Black

Dark green anti-dazzle panel

Note: This could be black or dark grey



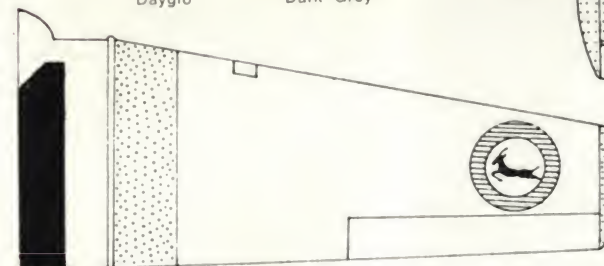
Current Type 'B' scheme



Dayglo



Dark Grey

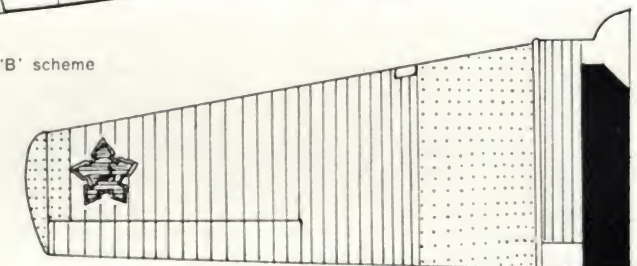


Type 'A' scheme—upper wing marking

Some aircraft in the 'A' scheme had the wing top painted dark grey between the dayglo areas.

(More drawings and details next issue)

Left, above: 7131, a Mk 2A, in the old 'A' scheme as drawn above. **Left:** Some squadron badges. **Far Left:** No 6 Sqn (Port Elizabeth)—white background, black edge, pale olive and black snake, black scroll, and gold lettering 'Pasop' (Watch Out); current style has the badge on a blue square with figure '6' under the scroll; examples 7126, 7156, 7059, 7034, all painted in scheme 'B'. **Centre:** 40 Sqn (Dunnottar)—white shield, yellow cross, black cat, red mouth, light green ribbon, black lettering; example 7530 in scheme 'B'. **Left:** No 5 Sqn (Durban)—red horse, gold wings, black bomb, white '5', black outlines, silver or bright metal background—examples 7615, 7618, 7231 (all scheme 'B') and 7699, a T-6G in scheme 'B' with white wheel hubs.



Type 'B' scheme—upper wing markings

Most aircraft carry a bomb rack under each wing on a line immediately outboard of outer edge of landing light.

Wing leading edge in 'B' scheme is dayglo extending back 12 inches on most aircraft.

Note: Springbok roundel centres face inwards, both wings, and face forwards on fuselage sides; this applies to both schemes.

Below: Harvard 37618 of 5 Sqn in scheme 'B' paintwork. Wing leading edge is dayglo. Wheel hubs silver. Squadron badge is painted port side only.



IN the previous articles I have dealt with the main types of weapons used in sieges of the medieval period. A besieger's camp, however, contained a hodge-podge of lesser equipment, all of which was vital in its own way, and this month I will try to describe briefly some of the many smaller accessories which you could make to add a bit of realism to your wargaming.

The crossbow was the favourite weapon for archers in a castle because of its extra power, the slow rate of fire often being compensated for by having two men at each loophole or embrasure. But the crossbowmen of a besieging force had the disadvantage of being in the open, exposed to fire while they re-loaded. This



Above (Photo 4): Defending the besiegers' camp, medieval style. Palisades protect the archers and the wagon has brought up new arrows. Bottom of page (Photo 1): Pavises under construction from matchsticks and card.

More Medieval Siege Equipment

Models for wargamers described by Terence Wise

was a slow operation which needed the archers' full attention. To counter this, crossbowmen of an attacking force made use of heavy wooden shields, or pavises, to provide shelter whilst loading and firing. Some pavises were simply a hoarding with a prop to hold it up, others were more sophisticated affairs with wheels and sometimes firing slits, which provided full cover at all times.

Use cardboard or 40 thou plastic card to make these shields, cutting pieces 25 mm wide by 30 mm long and scoring them along the length to represent planking. For each shield cut three lengths of match, one of 25 mm and two of 30 mm (see Photo 1). Glue a 30 mm piece along the bottom edge of each shield, the ends protruding to act as axles. Stick the 25 mm length centrally and at right angles to this. Angle the ends of the third piece and glue it in position as a prop between the other two pieces, setting the bottom end 5 mm back from the end of the 25 mm piece and allowing the shield to slope backwards slightly. While this is setting, punch four wheels from card with an office punch and glue them one on each side of the shield axle, and one on each side of the far end of the 25 mm length of match (see Photo 2). It would be more authentic to make a box-like chassis, but this would get in the way of

the bases on your figures.

Scaling ladders were another item which were certain to be used. Of course, these were a vital part of any assault, and can be made very quickly. In real life they would have been about 30 feet long (150 mm scaled down) and were made from heavy timber because they would be required to support the weight of ten or more armoured men. Mine were made with lengths of $\frac{1}{4}$ inch square balsa, the rungs from thin strips of plastic card. Allow 10 mm between the sides at the bottom, narrowing to 7 mm at the top. The rungs should be about 5 mm apart. (These measurements are governed by the bases of Airfix figures.)

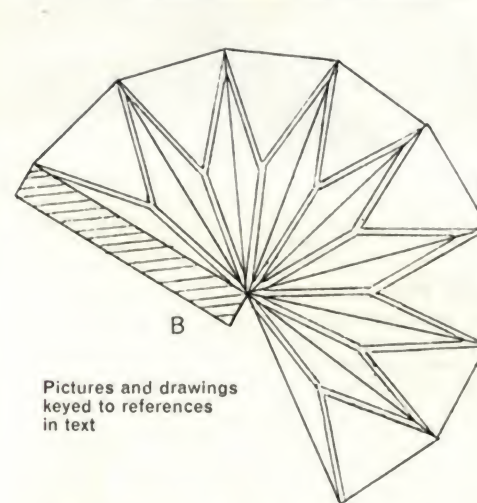
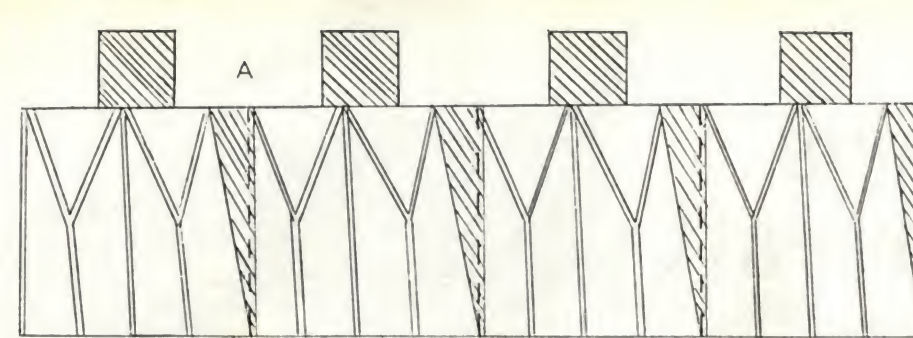
But before you could place a ladder against a wall there was often the little matter of a moat to be crossed! The most common method was to fill it with earth, stones or bundles of wood, but an alternative was to construct wooden 'bridges' on wheels. I made the ones in Photo 3 from pieces of plastic card 25 mm wide by 35 mm long. (These are a bit short and you might find 40 or even 45 mm more realistic.) Score lines across the width to represent planking. Mark a 65 mm length of $\frac{1}{4}$ inch square balsa at 5, 15 and 25 mm from one end, then glue narrow strips of plastic card, 15 mm long, across at these points. These

are handles for the men who push the 'bridge' into position. Glue the other end of the 65 mm length along a centre line on the bottom of the 'bridge'. Cut two 30 mm (longer if the length of your 'bridge' has been extended) pieces of match and make holes with a pin 10 mm from one end of each. Glue these pieces to the edges of the 'bridge' with the holes nearest the handle end: they will act as cross beams and will also provide a fixing for the wheels. The wheels from the Waterloo French Artillery set are the best for scale, and they are secured by the head ends of pins pushed into the holes just made. Sometimes these 'bridges' are seen in old prints minus their wheels when in position. I assume they also had a shortage of spare wheels, and removed them for further use once the bridge was securely in position.

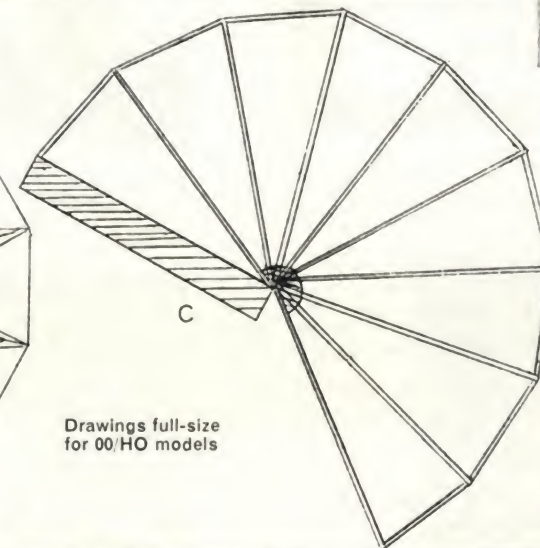
Meanwhile, back at the besieger's camp, equipment may be seen which aptly illustrates the long-term character of many medieval sieges. In Photo 4 is a section of palisades which might be erected to protect the camp against possible sallies by the garrison. Sometimes this palisade might be built within bowshot of the castle so that the garrison could be kept under constant 'sniping' by archers enjoying the same degree of cover. This had the effect of providing a constant threat to one, or even two, sides of the castle, so tying up a large percentage of the garrison.

A ditch (not shown) would be dug, the earth being thrown up to form a firing step. Stakes would then be driven into the front edge of the firing step to provide cover. I used a 100 mm length of balsa, 15 mm wide by about 7 mm deep, to represent the earth firing step. (Only the 15 mm measurement is important, as the step must be wide enough for the archers' bases.) Plasticine was used for the small counterscarp in front, and half matches were used for the palisade itself.

AIRFIX magazine



Pictures and drawings keyed to references in text



Drawings full-size for 00/HO models

The wagon to the left of the picture has just delivered another load of arrows! It was soon made, using the front axle assembly of the wagon from the Airfix Wagon Train set. Cut off the front half of the yoke and trim the raised, circular pad, on to which the wagon bed fits, until it is level with the bars at front and rear. Glue to this new seating a piece of plastic card 20 mm wide by 30 mm long.

Use fencing from the Airfix (Railway) Platform Fittings set for the wagon sides and front, removing every other upright. The front section is 7 uprights wide (3 removed) and the sides 9 uprights wide (4 removed). The side panels also have cross bar stubs left on to connect with the front panel. Lean the sides slightly outwards when cementing, the post bottoms being stuck to the edge of the new wagon bed. Fit the small pair of wheels, one pair of horses, and 'paint your wagon'.

Further back, beyond bowshot—and, indeed, beyond artillery range—would be the tents and pavilions of the knights. These can be quickly made by using the actual size drawings provided with this article. Fig A is for a small tent with sloping sides. Cut along the dotted lines and glue the pieces to the right of these lines over the shaded areas to the left. (The twin thin lines are merely a suggested pattern.) The tabs are for the attachment of the roof—Fig B, which also has the glue flap shaded. This type of tent was common until the 16th century, often with sloping sides as drawn here, but also with vertical sides. To



Above (Photo 5): A selection of tents, made as described here. The protecting palisades are seen beyond, while the besieged castle walls are in the distance.

make the tent with vertical sides, do away with the dotted lines and their shaded areas, the pattern would then have to be re-drawn, add a glue flap to one end and reduce the overall length by 15 mm. The same roof is used.

Larger tents may be made by adding 5 mm in height and 15 mm in length to the measurements for the body of the tent in Fig A. This will now need a larger roof—shown by Fig C. Pavilions were merely marquees, richly decorated.

The designs used on the tents were often quite simple, utilising vertical and

occasionally horizontal stripes. The roofs were often left bare, perhaps with a 'pelmet' added where roof joined the tent body. Photo 5 shows several patterns. I found it easier to 'paint' these with Biro or felt-tipped pens. Doors were created by cutting a slit and curling the flaps back, and flags can be fixed with a pin for a flag pole. The flags in the photo were made from emblems cut from newspaper belonging to Barclays Bank (eagle), The Light Infantry (dragon), and a piece from the coat of arms of a borough council.



Above (Photo 3): An early form of Ark! Wheeled bridges for crossing ditches. Below (Photo 2): The pavise in use.



Agricultural Aircraft

Some new ideas for model aircraft fans, with a big range of conversion possibilities

By Gerald Scarborough

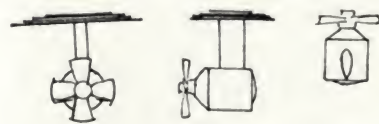
FARMING from the air started with the use of surplus RAF aircraft modified to take hoppers and chutes, tanks and booms, etc, and it is these early aircraft that make simple and colourful little conversions. I live in Lincolnshire, the main arable part of the country, and, of course, aircraft are used extensively around here. I have included various colour schemes but do suggest that you do a little research, as you may find a firm in your locality that will be only too willing to help you. Try the Yellow Pages of your telephone directory, or, if you do live in a rural area, a local agricultural merchant may be able to put you in touch with contractors.

To get back to the actual aircraft, they were simply fitted with a tank or hopper in place of the passenger seat and either spray booms and wind-driven pump, or a chute, were fitted underneath, these all being easily interchanged.

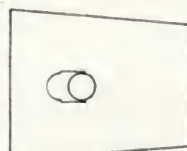


Auster details
Scale of feet

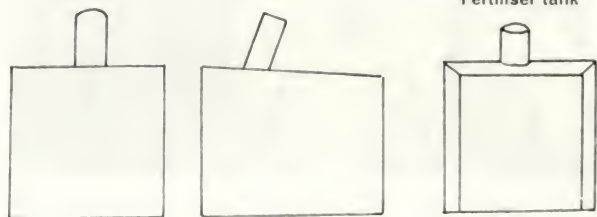
Wind driven pump



Top



Fertiliser tank



Front

Side

Rear



Completed model of Auster G-AJUW is the simplest of conversions in the agricultural range. Note the booms and the pump between the undercarriage legs.



Above: The appropriately registered G-APIG of Westwick Aviation ready to take off on a crop spraying sortie. It has the wind-driven atomisers drawn and described opposite. Note that it's a single seater.

Auster G-AJUW

For this aircraft I have fitted spray booms and a tank complete with large bore filler in the rear of the cabin with the air-driven pump under the fuselage. Colours are white fuselage, with red cowling and fuselage side flash; wings are red with white tips and white registration under port wing.

Very little alteration is needed to the Airfix kit. In fact, all that has to be done is to cut off the top dome to the cabin, clean up the resulting hole to a rectangle and either insert a piece of clear plastic or, much simpler, cut and fit a piece of clear Sellotape to cover the whole of the cabin top. Drill a $\frac{1}{4}$ inch hole in the sloping portion of the cabin top to take the filler tube. Make up a shaped tank to fit the rear of the cabin; dimensions are not critical, mine were as shown in the sketch. Boom is 10 cm long from .04 inch plastic rod with 20 nozzles from 2 mm lengths of rod cemented, equally spaced, on the top. Supports are from .04 inch rod in the centre and .03 inch rod outboard to the wing struts. The pump is from odd pieces of sprue with the propeller cut from a punched plastic disc.

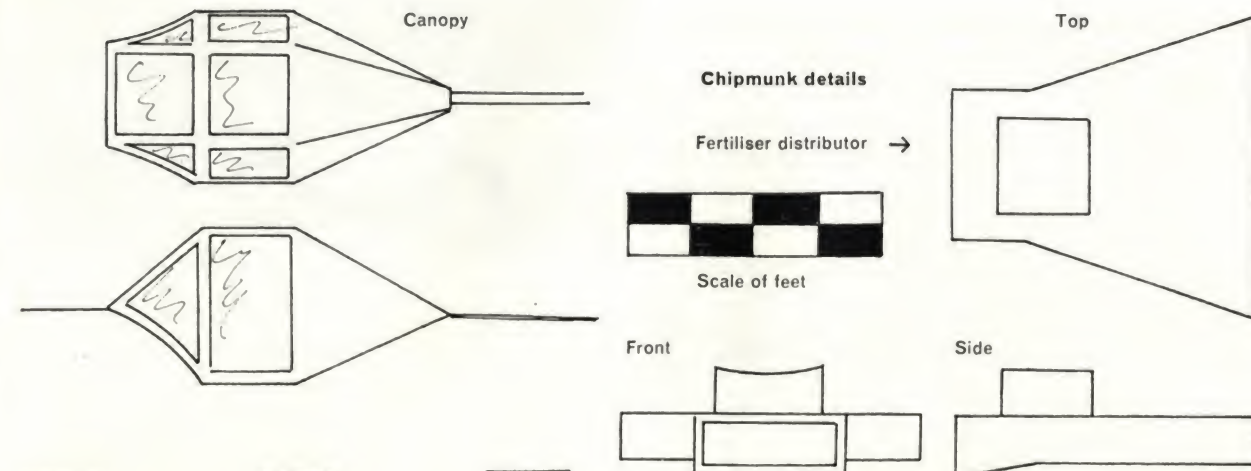


Farm Aviation's Chipmunk G-APOS in model form, showing the fertiliser distributor under the fuselage.

Chipmunk G-APOS

This is an aircraft I hadn't previously connected with agriculture but they were used by Farm Aviation Ltd and one of these I have made as a Fertiliser Spreader. The four aircraft used were G-APOS (since sold and converted to an aerobatic aircraft), G-AOTF and G-ATVF (now glider tugs with Air Tows Ltd, TVF having been converted back to a two-seater), and G-ASPW which was written off in an accident.

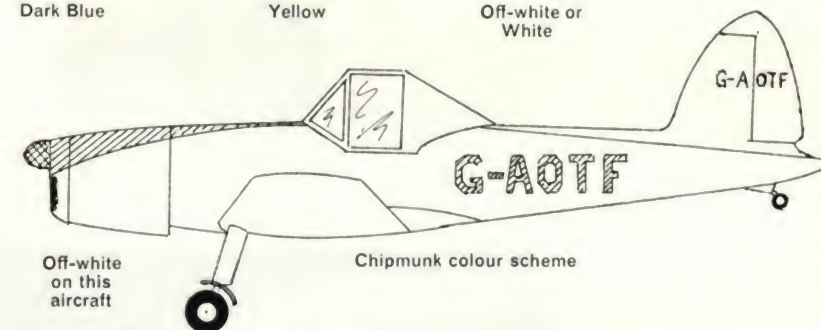
The only alterations (apart from sanding down the over-prominent rivet detail) to the Airfix kit are the fairing over the front part of the cockpit and building a new cabin over the rear portion. This is quite simple as it is flat sided and can be easily made from clear plastic either cemented together, or again you can use Sellotape. A drawing for the chute is also given and this should be self-explanatory but note the front and rear are open



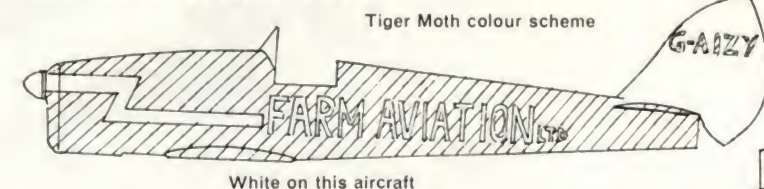
Dark Blue

Yellow

Off-white or White



Colour scheme drawings not to scale



to allow the slipstream to flow through, taking up the fertiliser and spreading it in an even swathe.

If you wish to model the glider tug version G-ACTF, this is fitted with small cycle-type mudguards to the wheels and these cover approximately one-fifth of the circumference of the tyre. The whole aircraft is in off-white with a dark blue cowling top as shown in the drawing, and with a yellow spinner.

The colour schemes given are as on the photographs I have, but these may at times have varied over the years the aircraft have been in service due to accidents, etc, and general refurbishing.

Tiger Moth

After faithful service during the war, the Tiger Moth was used extensively in the pioneer years of agricultural aviation, both for fertiliser spreading and for chemical spraying. It was fitted with a tank/hopper in the front cockpit and either a spreader chute or spray booms and air-driven pump. A more unusual version had four rotary atomisers, small airscrew-driven perforated atomisers which spun out droplets by centrifugal force. These were fitted on the top surface of the lower wing, two to port, two to starboard. Their construction is shown on the drawings and sketch and the only other alteration to the Airfix kit is

to fair over the front cockpit, adding a disc to represent the large filler.

This aircraft, G-APIG, is in fact still in use and the colour scheme is red fuselage, 'Westwick' in white, and with the wings and tail surfaces silver. Registration letters are painted in red under the port wing. An alternative scheme is the Farm Aviation Ltd aircraft G-AIZF and G-AMTO, in dark blue overall with the exception of the white fin and fuselage flash as in the drawings but note that these aircraft were fitted with fertiliser spreader duct or spray booms, NOT with the rotary atomisers.

Support vehicles

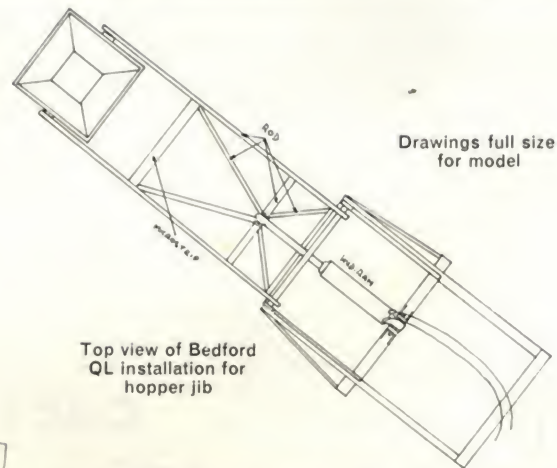
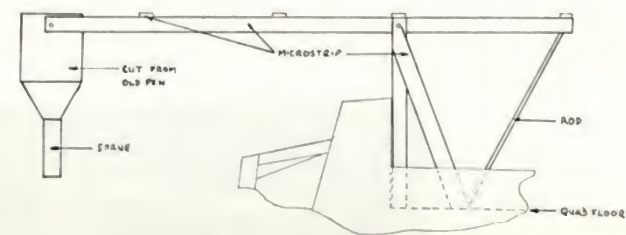
An interesting field of conversions is the support vehicles for agricultural aircraft and the photograph shows a modified Airfix Quad. This type of vehicle, fitted with a winch or hydraulic operated elevating gear to the loading hopper, was based on several ex-WD vehicles. The Quad had its sides cut down and was fitted with a 'home-made' jib and hopper. An alternative base would be the Airfix Bedford QL. In fact there are several vehicles of this type still used. The drawings show how either of these can be built. Due to local differences, the dimensions are

Continued on next page

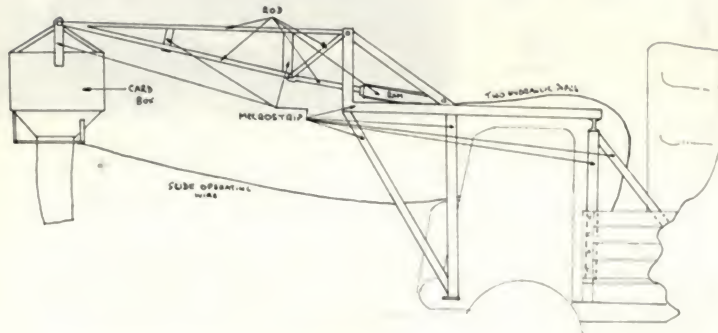
Agricultural Aircraft—continued

not too critical. The idea, of course, is that the hopper lowers to trailer or lorry height (an old Austin K3 or K6 would be a good ex-WD type farm lorry) for loading and is raised and run over the aircraft to discharge. These would be useful for scenes set up on railway layout with lorries, loaders, aircraft and Land Rovers in attendance, though, of course, the range of aircraft and attendant vehicles make a most original addition to a model aircraft collection and one which truly reflects the impact of aviation on at least one age-old calling.

My thanks to Mr Stan Meeds and Mr M. D. N. Fisher for help in research and the provision of pictures, details, and access to the real equipment on which the models and drawings are based.



Top view of Bedford QL installation for hopper jib



Top of page: The Quad hopper loader model tops up the Tiger Moth in prototype fashion. This is an easy vehicle conversion using the jib drawing above. Above: The Quad jib is the upper one with the Bedford QL jib immediately above. Right: Westwick's Tiger Moth in model form. The disposition of the atomisers is clearly shown on the wings. 'Westwick' wording must be hand-lettered in white or home-made from transfer sheet. Model still had to be rigged when pictured

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Above centre: Two of Tamiya's extremely popular new KUBELWAGENS (67p) which come with three crew members, set in a desert scene. The kit does not include the camel!

Top right: Tamiya's highly successful 'SCHWIMMWAGEN' Amphibious Jeep (67p). Each kit comes complete with three crew members, weapons and equipment. This picture also shows additional German Infantry soldiers in action which are available in the Tamiya range in sets of four for 24p.

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Bottom centre: British Infantry soldiers together with a 6-pounder gun (67p) in a very unlikely situation, capture a German Panther Tank. These Tamiya figures and models are all in 1/35th scale. British Infantry figures are now available in the Tamiya range of soldier figures and cost 24p.

Below left: Maintenance by U.S. Army tank crew on a 1/35th scale M41 WALKER BULLDOG (€1.55) with an M8 'GREYHOUND' armoured car in the background.

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Bombing Colours—continued

When battle commenced in the Middle East, fuselage roundels were being revised to have the yellow outer ring, for already the white ring had appeared on the fuselage roundel, albeit later than on home-based aircraft. Fin striping, too, appeared later, possibly because there was less likelihood of confusion with Italian aircraft if no stripes were carried. This can be seen, for instance, on the accompanying Bombay photographs. But within a few weeks of the fighting, fin stripes were added.

The campaign opened for the bombers with an attack on June 11, 1940, by 26 Blenheims of Nos 45, 55 and 113 Squadrons on El Adem airfield and it set a pattern for early operations over the Desert. Later in the day Wellesleys of 14 Squadron, including K7743 and L2710, attacked the Italian installations at Otumlo in East Africa. Then came a raid on Tobruk, a name which was later to be heard almost daily. On the night of June 14-15, Bombays of 216 Sqn in a finish of Dark Earth and Dark Green with hastily applied black under surfaces, commenced lone night operations which continued until January 2-3, 1941, by bombing airfields at El Adem and Tobruk. By day, Blenheim raids followed, against airfields and troop concentrations carried out by aircraft which mostly had black under surfaces, although it is known that some of 45's machines had pale blue under surfaces in a shade akin to the azure blue of later years. Such information as has come to hand suggests that Sky under surfaces came into vogue at a trickle during the summer months on the Mk Is, and that all the Mk IV replacement aircraft which began to arrive in February had them.

After the initial skirmishes in the desert died down, both sides realised they had serious supply problems. The Italians were not really ready for the fight, and began to build up their forces in Libya with a view to an autumn offensive.

For the British, the rapid turn in the fortunes of war brought grave problems. With Italy in the war and France lost, supply of the Mediterranean force was faced with difficult problems. One answer was to take supplies round the Cape, affording them strong cover as they passed Italian East Africa. The other, which paid handsome dividends, was to transport aircraft to West Africa by sea—Takoradi was the port chosen—and after erection fly them almost straight across Africa, bringing them to Egypt along the Nile Valley. Wellingtons for a night bombing force could be flown via Gibraltar and Malta, a route already used by crews of 2 Group squadrons which ferried out a considerable number of

Below: One of the early Wellingtons in the Middle East, T2818, 'T' of 148 Squadron photographed at Luqa in January 1941. **Bottom:** An early 1942 shot of a Wellington Ic of 38 Sqn after an overshoot into a quarry at Luqa. Finish appears to be standard Bomber Command (photos by Sqn Ldr G. N. B. Miller).



Above: Mainstay of the bomber force in the early war days, a Blenheim I of 211 Squadron landing in Greece. **Below:** A formation of Blenheim IVs with W:Z5993 nearest. N appears to have an unusual roundel and all have a white bar marking as well as a white individual letter.



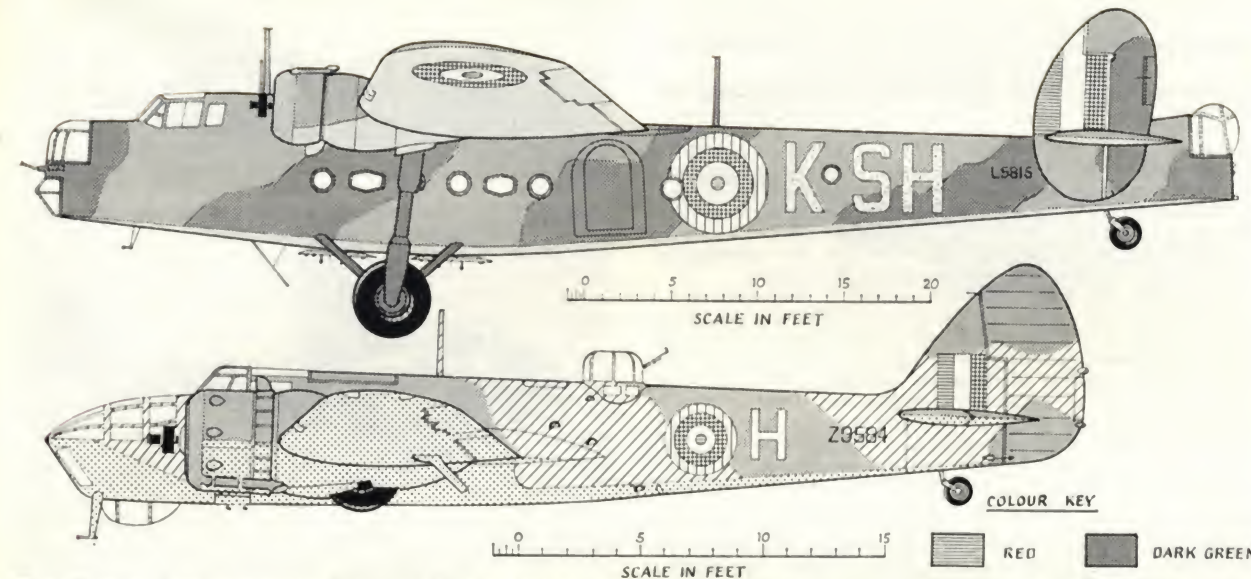
Blenheim IVs during the summer months. The first six aircraft to arrive at Takoradi were six Blenheims which reached the port on September 5, 1940. The first of the Takoradi-erected machines arrived at Abu Sueir on September 26. Then there was much to do after their long tortuous flight. Added to all this, handling equipment was in short supply despite the fact that they were at bases Britain had held for many a year, albeit on a shoe-string budget. Clearly it was important that the Italian holding in East Africa should be neutralised. Italy's forces there were fortunately completely cut off from their sources of supply, so the prospects looked quite good.

The war was only hours old when Wellesley's of 14 Squadron had made the first bombing raid on the large fuel depot near Massawa. Within the next four days there were eight raids by Nos 8 and 39 Squadrons on the airfield at Assab and Diredda. Wellesleys of Nos 14, 47 and 223 Squadrons were also engaged upon the campaign but Italian land attacks began to drive our forces back from British Somaliland. Fighting was very fierce and the strange sailplane-like Wellesleys took quite a pasting from enemy flak but seemed somehow to survive. Blenheims of 45 Squadron were brought in to assist them. Various such squadron moves came about to improve general dispositions. No 11 Squadron joined the fight in East Africa and on August 14 the forces at Aden were reinforced by 223 Squadron and a flight of 84 Squadron from Iraq. During the first six months of war, 54 convoys were escorted safely through the Red Sea by Blenheims and Wellesleys.

From Egypt and the desert beyond, the Blenheims were keeping up small-scale attacks, giving some escort to convoys which ran the Mediterranean gauntlet and flew many reconnaissance flights over the Italian positions observing the enemy build-up. It was considered that the RAF numerical strength in the desert was satisfactory, matching the enemy well. As soon as the land forces were in good order the British forestalled the Italians, opening an offensive on September 9. Blenheims hammered Tobruk and enemy landing grounds. By now, Mk IVs were in squadron hands, and the usual camouflage was the same as worn by the aircraft based in Britain. A steady advance into enemy territory began on September 19.

All was going quite well when, on October 28, Italy struck at Greece and soon the desert air forces became depleted, 84 and 211 Squadrons moving to Eleusis and Menidi near Athens, ill-prepared airfields which were quagmires in winter and some 30 miles away over mountain ranges from the area of battle. Most of their operational effort beginning on November 11, 1940, was against airfields, supply posts, communications in Albania, and on tactical targets for which there was so little information.

AIRFIX magazine



Top: Bombay bomber-transport L5815:SH-K shows the finish in use in the summer of 1940. Codes—medium grey—were in 4 foot letters. The fuselage roundel appears to have an outside diameter of 70 inches and the underwing roundel 80 inches. **Above:** Blenheim IV Z9584:H of 14 Squadron used in the desert war in December 1941. Code letter white. This typifies the dark earth, midstone and azure finish which became standard for most Middle East aircraft.

In mid-summer 1940 the first Wellington Ics flew to the Middle East staging through Malta. They were a precious commodity and were soon positioned in the Canal Zone. No 70 Squadron had them and No 148 Squadron reformed at Luqa on December 14 to operate them. On October 28, small-scale Wellington operations began from Malta and were directed against supply ports in Southern Italy to aid forces in the desert. Luqa was an ideal site from which to mount these raids but it was obvious that the enemy would retaliate, bringing another headache to the area.

One of the essentials was good reconnaissance. What seemed an ideal aircraft was the Martin Maryland reconnaissance bomber, the first example of which, AR705, arrived in Britain in July 1940. Initial intention was that it should be used as a bomber. Instead, the first batch was put aside for the reconnaissance rôle. Indeed, No 22 Squadron operating Beauforts from Britain began to equip with Marylands in August 1940. About the same time, No 431 Flight formed at Andover, receiving Marylands. These it took to Malta in September, AR705, '707 and '712, all having the cumbersome Armstrong-Whitworth dorsal turret. An interesting feature of these aircraft, and indeed other Marylands later used in Britain, was that their camouflage was Dark Green and Dark Earth with silver under-sides and not Sky as might be assumed. They wore no under-wing roundels.

Below: Maryland AR738 photographed in Britain on first delivery. **Bottom:** Maryland AR713 joined 431 Flight at Upavon in October 1940 and proceeded to Malta in November. It is seen here in a rare illustration, fitted with an Armstrong-Whitworth manual dorsal turret at Luqa soon after arrival.



Drawings by
A. M. Alderson

During October, the Wellingtons trickled through Malta from where, as their ferry crews rested, the bombers made operational flights. These Wellingtons wore standard Bomber Command markings with black side areas to the fuselage, had grey serials and carried only individual letters. By the end of October, 70 Squadron's aircraft included T2813, '2814, '2816 and '2832.

The situation in Greece boded ill and led to a complete shake-up of squadron dispositions. It was decided to mount a December offensive in the Western Desert, for which Blenheims of 55 and 113 Squadrons were supported by a detachment from 45 Squadron brought from the Sudan, by 11 and 39 Squadrons. To replace Nos 84 and 211 which had moved to Greece, Nos 37 and 38 Wellington squadrons were flown in from Britain in November, supplementing No 70 and the bomber Bombays of 216. These Wellingtons retained their home coding and included LF-B: R1182 of 37 Sqn and HD-T: R1018 of 38 Sqn. Periodically some of 70 Sqn's aircraft operated from Eleusis in Greece. No 257 Heavy Bomber Wing was formed in the Canal Zone on December 20, 1940.

On December 7 the air offensive began with an attack by eleven Wellingtons Malta-based on Castel Benito. Next day, 29 Wellingtons and Blenheim IVs attacked Benina and 216 Sqn bomber army camps. The land forces advanced on December 9 and by 16th had pushed the enemy out of Egypt. For Operation Compass, 116 bombers had been available and of these the Blenheims operated by day attacking camps and airfields, and Wellingtons from the Canal Zone made night raids on Tobruk and Benghazi—both major supply bases—whilst from Malta, Wellingtons bombed Tripoli and Castel Benito. Meanwhile, the supply of aircraft was gathering momentum with the arrival between September and December of 41 Wellingtons and 85 Blenheim IVs, fortunate because aircraft were deteriorating at an alarming rate at forward bases.

After a brief rest, land forces re-opened the attack on January 3, 1941, after Wellington and Bombay night raids. By day, Blenheims hammered the Bardia-Tobruk road and Bardia was soon captured.

It was known that units of the Luftwaffe had moved on to Sicilian airfields late December. This dreaded event had been expected and bombing operations from Malta were bound to

Continued on next page

Bombing Colours—continued

attract enemy reaction. On January 9, Stukas attacked shipping at Malta and the following day, HMS *Illustrious* was bombed off Sicily. A long, fearful and vicious onslaught on anything British was now unleashed. Twenty Wellingtons of 148 Squadron were presently based on Malta and they soon replied with night attacks on the Luftwaffe bases. Usually there were two bomber squadrons on Malta, supported by a handful of reconnaissance aircraft and a squadron of fighters—about 60 aircraft.

Meanwhile, the desert offensive continued. Blenheims of 45, 55 and 113 Squadrons led the assault on Tobruk on January 21, the town fell on 22nd, and then with the Blenheims battering the retreating Italians, the army assault pressed on to Derna. Next came the encirclement of Benghazi and the capture of many troops—and with all going well came the order from London to despatch more squadrons to Greece. The fear was that the enemy might push into Turkey and on to the oilfields beyond.

In a short time only 55 Squadron was left in the desert. The Dark Green/Dark Earth/Sky-finished Blenheims sent to Greece included L1381:VA-G, L1378:VA-F, L6630:VA-G of 113 Sqn and UO-R:L6670 of 211 Sqn. Reserves were getting low and the lines into the desert were long. And now the worst happened, the German troops under Rommel landed at Tripoli; the advance elements of the Afrika Korps had reached the desert.

Due to the distance involved the only response could come from the four Wellington squadrons. They could not prevent the build-up which was fast, so fast that on March 3 the enemy counter-attacked. Reinforcements in the form of 45 Squadron Blenheims flew back from Greece but could do little to stem the German advance to regain Libya, despite many attacks by day—later by night—on landing grounds and vehicles. Soon, all the Wellingtons had to be moved to Egypt due to the intensity of enemy attacks on Malta.

As the British withdrawal from Libya continued, in April there came the German onslaught on Yugoslavia and Eastern Macedonia. What had been an unpleasant campaign immediately took on a more fearsome aspect as the Germans smashed the RAF bases in Greece. Within two weeks they were as good as destroyed. On April 17 the few Wellingtons in Greece withdrew and six days later remnants of the Blenheim force fell back to Crete. Bombays of 216 were now employed in their intended transport purpose, snatching what could be gathered and brought out of the chaos.

It was fortunate that the Takoradi route was flourishing. In February, for instance, there were 19 Blenheims and 23 Marylands (mostly intended for the SAAF) ready to make the trans-Africa journey. Seventy-nine Blenheims and six Marylands were safely there in crates so that if the enemy could be held in the desert, reinforcements would soon be to hand.

In East Africa it was a different story. The Wellesleys and later Blenheims hammered away at the Italians, and land forces began an offensive on December 16, 1940. This was so effective that Addis Ababa was entered on April 6 and the Italians capitulated in May 1941, releasing troops for the desert war.

Build-up of German forces in North Africa was now reaching very serious proportions. Their most vital need was a good fuel



Top: Wellington 1c of 38 Sqn, R1095. **Above:** AG837 was the third Baltimore Mk III, the first version of this aircraft to have a four-gun dorsal turret. Note the underside demarcation line (Imperial War Museum photos).

supply which could only be brought to them by tankers from Italy or Greece. To halt this it was decided to detach some elements of the 2 Group Blenheim force from Britain. In June 1941, the first crews flew out, drawn from 82 Squadron, a very experienced anti-shipping formation and including UX-Y:V6435 in the usual Dark Green/Dark Earth/Sky finish with grey codes. Next month, detachments from 110 Squadron (including V6523) and 105 (including V6014-GB:J) followed, and a particularly tough campaign developed using aircraft which a few weeks ago were operating over the North Sea and retained their home style markings. Oil tankers and ammunition ships were the prime targets, calling for steel nerves and great courage during the low level attacks from a clear blue sky. Losses were high, the campaign terrifying, and very few who flew to the Mediterranean ever returned. These detachments continued until early 1942, and they all but halted Rommel's oil supply in 1941.

During August 1941 a major change in aircraft colouring in the Middle East took place. Hitherto, the Dark Earth and Dark Green had sufficed. It was quite acceptable for East Africa and for Greece, and 55 Squadron even considered that the colours were satisfactory for some areas in the desert war. But the deep blue sky suggested the adoption of deep blue under surfaces and the sandy wastes for shades of brown. So it was that during the summer, aircraft being delivered to the area arrived wearing Dark Earth and Middle Stone camouflage with Azure Blue under surfaces. Some of these aircraft had these colours sprayed upon them before leaving England and at the preparation units there. Doubtless there was a time lag on operational units at advanced bases, but during August the major change seems to have taken place. Wellingtons had the new brown finish but retained their black under surfaces, and grey codes. Usually the codes were white on the Blenheims, initially at least, but a change to red came in 1942. Two aircraft which in August had the two-tone brown camouflage were Wellingtons X9937:S and X9948:G of 108 Squadron formed at the time. Blenheims with two-tone brown camouflage and white individual letters aft included V5582:R and Z9576:E, both used by 14 Squadron in autumn 1941, and Z9601:H of 55 Squadron, also with white individual letters.

Rommel continued his advance towards the Egyptian border, but Tobruk did not fall and soon the Afrika Korps commander wisely halted to organise his supply lines. The respite for the British was welcomed and they too used their time very wisely. In the desert the air force was reorganised as the Desert Air Force formed October 9, 1941, with 16 squadrons, including six with medium bombers. They were placed in highly mobile Wings ready to support any rapid advance. Operational Training Units were formed or expanded, whilst day and night raids continued. The heavy bomber force in the Canal Zone, No 257 Wing, was expanded to Group strength, becoming No 205 Group. From

Malta, despite the shattering air attacks, the raids continued against Naples and Tripoli, whilst Wellingtons from the Canal Zone area hit at Greece, African targets and routes in and from southern Italy. Nightly attacks took place on Benghazi. But the main task was to build up the forces for a heavy counter-attack. Operation *Crusader*, the prelude to which opened on October 14 when Blenheims attacked airfields and dumps and the force of Wellingtons raided Benghazi, so much so that the enemy had to use Tripoli as the supply port. It was at this time that No 104 Squadron brought its Wellington IIs to Malta, including W5531:EP-S, which wore the two-tone brown camouflage and had grey codes. Squadron letters were later deleted from their aircraft.

Work-up of the mobile elements continued and the offensive opened on November 18, by which time there were nine bomber squadrons in the Desert Air Force. Soon a tangled battle developed, for the Germans were far tougher than the Italians had ever been. The fight flowed to and fro, with Blenheims and Marylands heavily engaged in tactical bombing, with FAA Albacores of 826 Sqn acting as pathfinders at night, on account of the good view from their cockpits and their slow flying qualities. It was not easy using the mobile bomber force, however, since the fighting was so fluid. As in the French campaign of May 1940, the Blenheims were outclassed and when six crews of 45 Sqn operated on November 21, four were shot down. Fighter escorts were always provided subsequently. By December the



Top: Bombay N-SH of 216 Squadron photographed about June 1940. A yellow outline to the fuselage roundel has been applied, codes are grey, but no fin stripe has yet been added. **Above:** Close-up of Bombay L5815:K-SH shows the huge roundel. Finish is Dark Green/Dark Earth/Sky. Fin striping has yet to be applied. **Bottom of page:** Bombay L5857 SHC in 1940 finish.

enemy was all but surrounded, only to escape at Gazala. On Christmas Eve, Benghazi was entered, by which time the advance was straining supply lines. Then another major blow struck the Desert Air Force. Its ranks had again to be depleted, for the war in the Far East made a desperate call on the bomber squadrons. The first six Blenheims left for the Far East on December 9 and six more left 113 Squadron on 30th. In January and February 1942, Nos 45, 84 and 211 Sqs were all sent to the Far East.

Fortunately more aircraft of more advanced type were now arriving in the theatre. Boston IIIs were arriving for the SAAF squadrons and the replacement type for the RAF Blenheim was the Baltimore. These began to arrive in October via the Cape route. The first squadron to work up on them was No 223 which previously had been flying Marylands and had a brief flirtation with the Boston later. Although Baltimore Is and IIs were soon on charge, it was the start of May 1942 before any operations took place and by then 55 Squadron had re-equipped.

Despite the bombing of Malta, its Wellingtons still operated.



Above: Not all the Liberator IIs had dorsal turrets. 'P' of 108 Sqn here appears to be AL565. Under the wing tip can be seen faded or painted-out American insignia. **Top:** Another Liberator II of 108 Squadron; 'O' appears to be very pale grey, possibly white.

The Far East war now snatched some of the supplies destined for Egypt, and reduced strength and the power of the Luftwaffe combined to get some convoys through to Rommel. As skilful as he was cunning he re-established his position and on January 21, 1942, he attacked, catching the British unawares, although his offensive was halted at Gazala. Supplies were still limited to both sides, but at the end of May, Rommel resumed the offensive.

Since January 1, the Kittyhawk fighter had been in action and was now escorting RAF Baltimore and SAAF Boston operations and sometimes dropping bombs on the same operations. Attacks on enemy troop concentrations were daily events, sometimes as many as four raids being flown. Rommel's offensive, re-opened May 26, managed to make a breakthrough in the south and the way was open for him to attack the rear of the British. A rapid retreat was the only solution. Tobruk fell and on June 24 the Germans crossed into Egypt. They were held at El Alamein on July 1, 1942.

One thing was apparent. The Desert Air Force was clearly superior tactically to the Luftwaffe which had hitherto been upheld as the model to be copied. Now it was excelled. During the withdrawal phase RAF bombers had been very active and skilfully directed. Bostons and Baltimores attacked enemy positions daily from advanced bases since they were now stationed in the Canal Zone.

In December 1941 the first Liberator IIs arrived in the Middle East, and on January 11, 1942, the first operation was flown, against Tripoli. Apart from these, only 21 Squadron's Blenheims and the Malta-based Wellingtons could reach this target, so the Liberators were a useful addition. During May, crews of 159 Squadron arrived and were followed by 160 Squadron in July. The intention was that they should stage a long-distance raid on the Ploesti oilfields, but the Americans did this and the Liberators stayed on in the Middle East until January 1943, whereas it had been intended they would be there only briefly.

By July 5, 32 Halifaxes had arrived in Palestine, 16 each of Nos 10 and 76 Squadrons, on a mobility exercise. Before leaving Britain they had their camouflage colours changed to Earth and Stone. One of 10 Squadron's aircraft made the first sortie, to Tobruk, on July 11. Six days later came the first Liberator day raid, also on Tobruk.

Between November 1941 and September 1942, 308 Baltimores had reached Egypt, 488 Blenheims came in from Takoradi, and 21 Bostons. Twenty-nine Liberators arrived by air from the USA. The first Marauders were in the hands of 14 Squadron for training and the first Mitchell, too, had arrived. And behind the scenes the planners were busy, and that grand figure of victory, General Montgomery, made preparations for an offensive that was to sweep Rommel's Afrika Korps into dust.

Michael J. F. Bowyer

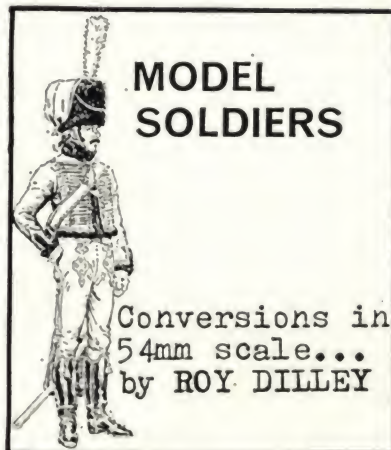


Below: Z2218, a Boston III in earth, midstone and azure finish. The aircraft is in RAF hands here but later served with 12 Sqn SAAF. Note the red propeller disc line (Imperial War Museum).





Left: Close-up view of a pre-1914 period Army Service Corps GS Waggon displayed on the portable base described here. Note the effectiveness of the 'gravel' (sand) and the hedge (lichen). This model is an old Britain's lead GS Waggon (withdrawn long ago) with added detail, altered figures, and new paint. It would be possible to make up a similar piece now with the new Lasset GS Waggon, Britain's farm horses, and suitably adapted plastic seated figures. Uniform of the ASC as shown is dark blue with white trouser stripes and piping.



WHILST this series of articles is concerned primarily with the creation or conversion of model figures, consideration must also be given from time to time to questions of ancillary equipment and background. Just as living human beings and animals have an existence in which a great many factors of environment and occupation play their part, so models of man and beast can, in order to be more convincing, be displayed in settings and with trappings and equipment that suggest the circumstances of real life.

Of course, limitations of space available to the hobbyist must affect the size of displays, but in previous articles the idea of 'mini dioramas' has been discussed, and it is significant that an increasing number of entries in the competitions of various modelling societies have included a representation of environment, some of a highly detailed and ingenious nature, others merely suggesting terrain or surroundings. A much greater accent is being placed on realism, including a convincing setting, and this tendency is noticeable even where models are of an inanimate object, such as a tank, an aeroplane, or a ship.

However, a collection of, say, vehicles, each with its own background base, particularly in 54 mm scale, occupies a great deal of space, and it may be more convenient to construct just one or two bases, of a portable nature, on which any suitable models can be displayed temporarily at meetings or competitions.

I have made a simple base of this kind,

and have used it as a background for both figures and vehicles. It has a minimum of detail, but is surprisingly effective and consists of a wide strip of 'gravelled' surface with a narrow border of 'grass' along one side together with a lichen 'hedgerow'. The textured surface is adequate to depict a country road or the edge of a parade ground, and can be made to serve authentically for a number of situations. Because of the uncomplicated nature of this base, it is particularly suitable as a portable background, but of course the same type of setting can be used, with as much detail as desired, permanently installed in a cabinet or glass case, to display models on a rota basis.

Method of construction is as follows. Take a piece of $\frac{1}{4}$ inch thick chipboard 9 inches \times 20 inches in size, and sand off all rough edges and surfaces. Cover one side with green baize, felt or flock-paper, bonded to the wood with Unibond or other suitable adhesive. This makes a smooth, soft underside to the base, and prevents it from scratching polished surfaces of tables or display areas. Next, coat the top side of the base with a generous layer of Unibond to within $1\frac{1}{2}$ inches of one edge, and sprinkle this

with coarse sand. I used some of a pale golden hue that I obtained from a Cornish beach whilst on holiday and which depicts gravel very well. Tap it down firmly with a flat ruler after sprinkling is completed. After it has dried out, gently brush off all loose grains, and patch in any sparsely covered areas with another application of adhesive and sand. Now cut a $1\frac{1}{2}$ inch strip 'grass' landscape matting such as is obtainable at any model shop carrying railway scenic materials. The brand name is Vaupe and it costs 89p for a large sheet. Stick this to the part of the base surface that has not been treated with sand. Dyed lichen, also obtainable as scenic material, is used to make a hedge, cemented along the outside edge of the grass strip. It should be approximately 1 inch high. Finally, a strip of $\frac{1}{4}$ inch black PVC self-adhesive tape is applied all round the edges of the stand to finish it off tidily (Fig 1).

The result is an attractive background, large enough to take several small vehicles or one big one, or a number of figures. As a refinement, if it is desired to give the background height, several holes can be drilled in the grass verge to receive the trunks of small trees, which

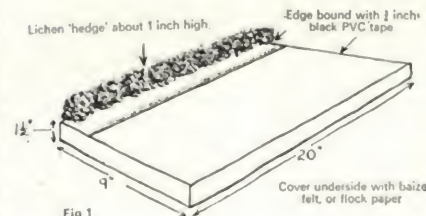


Fig 1
Details of portable base

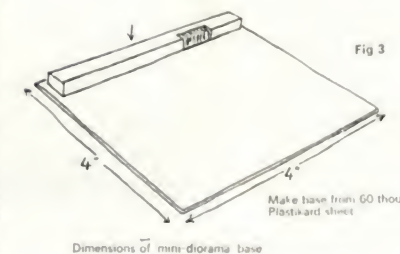


Fig 3
Dimensions of mini-diorama base

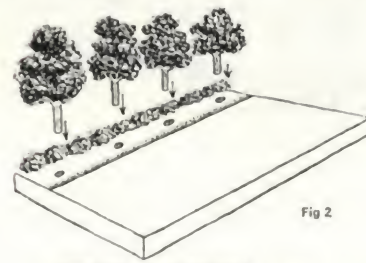


Fig 2

Holes drilled in base for addition of optional movable trees, eg. from Britains' range

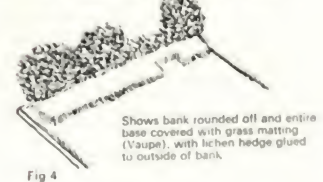


Fig 4

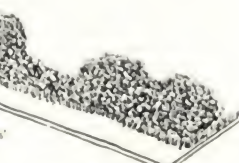


Fig 5
Front view of base shows 'grass' strip added to bases of lichen bushes to seal them in

can be bought ready made, or in kit form from Britains, or fabricated quite easily from twigs, lichen, etc. They should not be permanently fixed in place, but merely plugged in so that they can be readily removed for ease of transport or storage (Fig 2).

A little thought and imagination will suggest other simply achieved backgrounds suitable for the requirements of an individual modeller's collection, and just two or three varied bases will give a considerable amount of flexibility in presentation. Incidentally, I have specified a reasonably thick and rigid chipboard for this purpose, as I have found, through bitter experience, that lighter materials such as expanded polystyrene ceiling tiles are too flimsy to resist the knocks that a portable stand will inevitably receive, and thus need a great deal of bracing and support to become even moderately rigid. However, these ceiling tiles can be used with success bonded to a wooden board to provide a ground area that can readily be worked to represent undulating ground, a wheel-rutted road, or other irregular surfaces.

I used a similar technique to fabricate the mini-diorama base for displaying the German machine-gun team which was featured in last month's article. This shows the gun being fired over a low bank and hedgerow at the edge of a grassy field, and is just sufficiently large to accommodate the three figures adequately. In this case, however, the figures are fixed to the base as a permanent display group.

To make the base I cut a piece of 60 thou plastic sheet, 4 inches square, along one side of which I cemented a 4 inch length of $\frac{1}{4}$ inch \times $\frac{1}{4}$ inch balsa wood, about $\frac{1}{2}$ inch from the edge. This was rounded off to form the shape of the bank, from which a $\frac{1}{4}$ inch portion was cut out about $1\frac{1}{2}$ inch from the right-hand end to form a recess for the gun bipod. The whole surface of the plastic and wood was then coated with Unibond and covered with a piece of Vaupe grass



Last month's MG 42 team, now shown with all figures painted and giving a view of the complete mini-diorama area. The grass texture (Vaupe) is particularly realistic.

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General view of the display base, here without the optional trees, shows how simple it is. It will take a complete miniature Guards company and colour party quite easily, simulating the edge of a parade ground.

matting pressed firmly down all over. It was necessary to slit the matting carefully in order to get a snug fit in the recess.

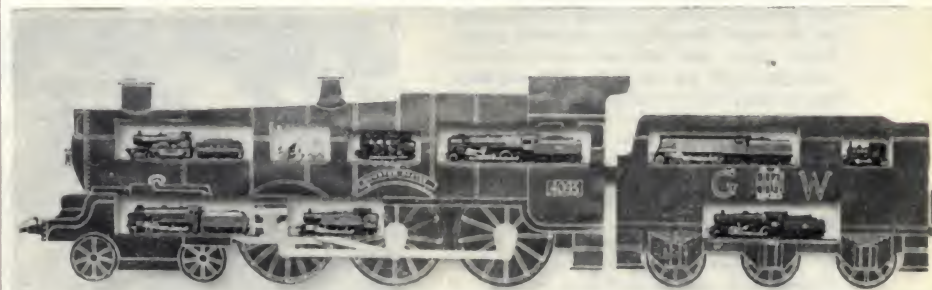
Lichens were glued along the outside of the bank, and a $\frac{1}{4}$ inch strip of matting was applied over the roots of the lichen to seal them firmly to the base. A small gap was snipped in the 'hedge' to allow the machine-gunner an unobstructed field of fire, and after the figures had been attached to the base with Devcon epoxy adhesive, pressed down well into the 'grass', the surface

was painted to simulate odd footmarks and scuffed patches.

Although this, too, is strictly a non-elaborate background, the figures are considerably enhanced by their placement in a miniature environment. I hope that readers will themselves experiment with this simple display method, and will discover how much more convincing miniature figures or models become when they have a place, however small in which to exist, compatible with their scale, period, and function.

Display piece for model locomotives

NEAT AND NOVEL IDEA FOR SHOWING MODELS



IT is not always convenient to construct separate showcases for a number of models, for it is sometimes difficult to find suitable sites for them around the house. They can, however, be displayed in one large showcase, or it may be possible to arrange them on shelves which are fixed to a wall or suspended from a picture-rail. It was the latter alternative which led to the construction of the engine profile shown in the accompanying photograph.

After cutting wood to the lengths shown in the sketch, the four $1\frac{1}{2} \times 1$ inch pieces were screwed into the top and bottom 2×1 inch pieces.

The profile of the engine was cut from sheets of art card to a scale of 28 mm to the foot. This was drawn from a full size OO

scale plan of GWR No 4097 Kenilworth Castle in the August 1961 edition of the *Railway Modeller*, multiplying each measurement by seven. (This size was chosen so that the overall length would be approximately 5 ft).

Black paper was then cut to the same shape and glued to the card. The boiler linings, wheels, cab windows, etc, were drawn on the black paper with a white grease pencil (chalk was found to smudge too readily).

The positions of the models were then decided and, as can be seen from the photograph, these were spaced so as to leave most of the coupling and piston rods uncut, and this meant placing six models on the top shelf and only three on the lower shelf.

Rectangles were then cut out of the card in the chosen places and ballasted Peco Streamline OO track laid in these spaces. Within each rectangle, a 'box' was formed of white art card and Melinex was glued to the front of each rectangle to provide a viewing window.

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Mining in Miniature

MODELLING DETAILS

BY MICHAEL ANDRESS

IN last month's article I illustrated various mines both model and prototype. The simplest of these was a small model mining scene which I want to describe in more detail this month.

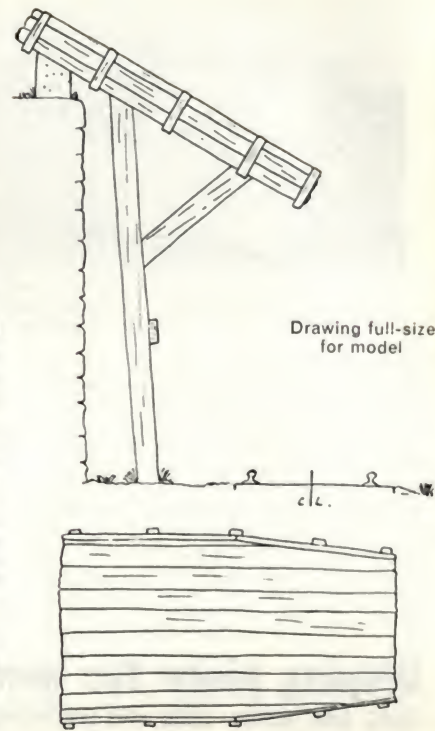
I planned the scene to represent two small ridges with the intervening depression near the foot of a hill. Ore was discovered in the two ridges and excavation began, the waste rock being allowed to drop down into the small valley between the ridges. To enable a standard gauge track to be laid the lowermost parts of the ridges were cut away and soon the ore was being transported away in railway trucks. When the superficial ore had been dug out the miners had to tunnel deeper to reach more deposits. The waste rock was used to fill in the depression and after building a rock retaining wall, the miners levelled this area off, resulting in the small flat plateau. Narrow gauge tracks were laid so that ore could be brought up in tip trucks by horse or man power and the wooden chute was built to allow easy transfer of the ore from the tip trucks to the standard gauge wagons. Later, one of the tunnels became unsafe and as the vein of ore was almost worked out, the tunnel was closed and the entrance boarded up.

I have described this fictitious series of events not because the details are of interest or importance to you but to illustrate that planning your scenes in this sort of way can often be helpful in deciding the final form they should take and in avoiding unrealistic arrangements.

Although this whole scene occupies an area only a little greater than a foot square, it not only provides scenic interest with its small details, but is also a source of operational interest.



Photo 4: An Airfix Platelayers' Hut serves as a small tool store and office.



Photos 2 and 3: Two pictures of the wooden ore transfer chute. Construction was from balsa wood cut to size and pre-painted before assembly with a thin wash of brown/black paint. The drawing shows full-size drawings of my model. However, this chute was designed to fit the site on my mine scene and you may have to modify some dimensions to suit. The critical measurements are the height of the stone retaining wall, the distance of the narrow gauge and standard gauge tracks from the



Photo 1: This aerial view of the whole scene clearly shows the arrangement of tracks and structures. Scenery construction followed the techniques described in my article in the September 1971 issue of Airfix Magazine and Photo 2 of that article showed an early stage in construction. The track, both narrow and standard gauge, are Peco products as is the wagon turntable. The narrow gauge tip trucks are Eggerbahn and the human and animal figures are by Airfix. The standard gauge engine is an Airfix Fug conversion and the wagon is a modified Airfix Rocket tender.

wall and the heights of the wagons. The other dimensions are not critical and these chutes come in various shapes and sizes. On my model there is not clearance for the locomotive to pass the loading chute and only wagons can go beyond; you may like to position a warning notice to this effect (eg. 'Engines must not go beyond this board') where it can easily be seen by engine drivers. The ladder is also built up from balsa strip.

Photo 5: The timber framing at the two tunnel entrances is balsa strip; note the plank over the top of the portal to shield the entrance from falling rocks. The entrance shown in this picture is similar to the other but has been boarded up. Note the 'Keep Out' sign and the overgrown disused track together with the scrap planks and rock debris. A full colour picture of this whole scene is included in my book Narrow Gauge Model Railways published this month.

AIRFIX magazine

THE failure of the Italian army to successfully invade Greece in 1941 caused a diversion of German effort from the build-up for the invasion of Russia. After a last-minute withdrawal of support from Yugoslavia, German forces invaded Yugoslavia and Greece in 1941 in the now classic 'Blitzkrieg' style. To prevent a retreat over the Corinth Canal a small force of paratroops from Fallschirmjaeger Regt 1 landed by the main

Fallschirmjäger



By Robert C. Gibson

bridge and seized it, only to have it blown up in their faces by British troops.

The swift advance of the German forces caused the British and Greek forces to withdraw southwards to the island of Crete. At this point, the Luftwaffe suggested that as the Army and Navy would be in no position to invade Crete by sea in strength, an airborne landing should precede the small sea-borne landing force to mop up the 'demoralised' Allied forces and seize harbours and airfields on the north coast.

The Allied forces were far from demoralised and well acquainted with Fallschirmjaeger tactics (due to the capture of a staff manual in 1940) and gave the paratroops a very bad time. But the failure to co-ordinate the defence allowed



Above: Front and rear views of a paratroop sharpshooter (standing, with Kar 98K) and a machine gunner with MG 34, both converted from the Airfix 54 mm German Infantry set. Full basic changes needed for the helmet and smock were given last month.

the shaken Germans to consolidate and fly in reinforcements and these, fresh troops from 5th Mountain Division, helped to turn the tide and conquer the island. The elite parachute force had, however, received a severe blow from which it would not recover: Crete was the last major parachute operation. Apart from a few 'pinprick' operations, the Fallschirmjaeger units were to fight on as elite infantry units to the end of the war.

Uniforms

No changes had really taken place in clothing at the time of 'Operation Mercury' (the Crete landings). The long motor-vehicle coverall appears to have vanished, as had the black-white-red shield on the helmet. More helmet covers were being worn, and the picked sharpshooters (see 'Equipment') wore goggles during the descent to protect their eyes. Sleeves were often rolled up.

Equipment and Organisation

The Schmeisser MP38 had become more widely used, and dependent on the role of unit, an issue of up to 60% was common. To offset the poor longer-range accuracy of the MP38, two men in each Section were armed with a Kar98K (or Gewehr 98) with telescopic sights.

Heavy equipment was brought into combat for the first time, and the 20/28 mm PzB41 anti-tank gun and LG.1 75 mm recoilless gun supplemented the 81 mm mortar and MG 34. To tow the 'artillery', the NSU-Kettenrad half-track motorcycle made its first appearance.

Modelling

54 mm: Illustrated this month are some figures typical of the Crete campaign. The MG 34 gunner comes from the Airfix German Infantry, and his helmet is cut down and trousers and tunic modified very much as described last month. There are a number of alternative sources of MG 34 gunners: Airfix Afrika Korps (MG 34 overscale),

Almarks Panzer Grenadiers (MG 34 needs a lot of work, and gunner has an unnatural position) and Tamiya's German Infantry (men too small, but MG 34 99% accurate and 1:32 scale). The MG 34 used is about 1:30 scale in barrel length but otherwise reasonably good, and can be used as supplied (with the loader).

The rifleman is again Airfix—if some readers wondered where the crouching figure with the MP 38 came from last month, this figure was made with the legs of the standing machine-gunner and the body of the crouching rifleman. Coveralls, trousers and helmet were made as before. Helmet goggles were added from Plasticine, and the 'telescope' made from a 'Bangalore torpedo' from the OO World War 1 Germans set. It was pinned into place after removing the back sight.

OO/HO scale: Since the changes in personal equipment and uniform make little difference in OO/HO scale, I shall concentrate on providing the smaller figures with some 'heavy weapons'.

The problems of making exact scale replicas of such tiny weapons in this small scale are considerable, so that in order to enable the inexperienced modeller to make them, I have borrowed a leaf from Chris Ellis's book and produced replicas which 'look' like the real weapon and capture the effect even though they are slightly simplified.

The 50 mm mortar was described last month, and the 81 mm mortar can be made even more easily. The 3 inch mortar supplied in the Airfix Paratroops Set will fill the bill very nicely: purists may wish to construct the front bipod as per the original.

The 20/28 mm tapered bore Panzerbüchse 41 has been issued with both the Airfix German Infantry and Afrika Korps Sets for many years. Constructing an exact replica of the airborne version's carriage would require considerable skill in 20 mm scale, but there is another way. The mounting as supplied is fitted with

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Below, left to right: Airborne forces' LG.1 75 mm recoilless gun made from scrap—dimensions in text—note tubular divided trail; kneeling gun crews altered from German Infantry set; gun commanders with binoculars converted from Afrika Korps set; Panzerbüchse 41; ammunition boxes from Wagon Train set; 8 cm mortar and man furling parachute all converted from British Paratroops set.



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NEW

KITS AND MODELS

LGB 1:22.5 scale railways

THOUGH it is by no means new, having been introduced four or five years ago, the West German Lehmann Gross Bahn (LGB, ie, 'Lehmann Big Train') is new to us and we've had some diverting weekends recently 'playing trains' on the grand scale with a selection of items from the range.

For anyone not already familiar with the LGB line, the sheer size of the system comes as the first surprise. The train sets come in boxes so big that even struggling home with them is something of an adventure in itself! Basically the LGB system is narrow gauge using the 45 mm track of standard Gauge 1. The track itself, however, is of heavier section than actual Gauge 1 track. It comes in snap-together form just like HO/OO track, complete with rail joiners of conventional type but with optional plastic clips which serve to make a more permanent join if needed. Brass is used for the track and sturdy plastic for the sleepers, the latter realistically grained and knotted like real wood. An optional aluminium track is available at a slightly lower price: this latter is only really suitable for indoor layouts, while the brass track is all-weather and can be left indefinitely outside if desired. LGB takes advantage of narrow-gauge characteristics to utilise sharp curves in prototype fashion, and the basic LGB circle of track works out at just about 4 ft in diameter. Thus it is compact enough to allow indoor layouts, despite the large scale. A full range of points, crossings, etc, is available, and Beatties, the UK importers of the LGB line, also sell 'do-it-yourself' yard lengths of track which consist of the rail sections and sleeper bases for simple home assembly. This gives a large saving over the price of individual track pieces.

The locomotives and rolling stock are the real scene stealers in the LGB range, being truly remarkable pieces of mass-produced plastic model engineering. There is a largish range of locomotives available, the ubiquitous Krauss 0-4-0 tank engine in various guises being the most common. Our sample was the industrial version of the model. This is a duplicate, incidentally, of a model of the same locomotive in the Egger HO narrow gauge range, as is much of the LGB

stock. The motors operate off 12V DC power supply and normal HO/OO power controllers can be used perfectly happily. Motors are completely sealed and are maintenance free according to the LGB instructions. They do, however, give a technical break-down and show how the motor and locomotive can be stripped if needed; spares are available. In our experience the LGB locomotive proved to be entirely fault free and has a speed range from a sharp gallop to a barely perceptible crawl, the slowest we've ever seen on a model locomotive—it is really necessary to use a marker on the ground to be sure that the locomotive is actually moving! Features of the Krauss locomotive—common to all others in the range—are screw assembly, driver figure, full cab detail, reversing headlamps (which really throw a beam), and every conceivable detail except the sanding pipes as far as we can judge. There is a rubber traction tyre on one wheel and two-rail pick-up is via spring-loaded plungers. An electric steeple-cab locomotive, a modern Schoema diesel shunter, and a 'Fiery Elias' tram engine are also available, the latter pair being the cheapest at £17.33 each. An Austrian 0-6-2T is scheduled for release soon.

Rolling stock comprises a full range of open and closed wagons and several types of passenger coach. Recent introductions are typical pieces of American narrow-gauge freight stock, complete with diamond frame bogies. Flexibility round the sharp LGB curves is assured by pivoting the axles even on the 'rigid' wheelbase vehicles. Assembly is entirely by screw and, once again, spares are available. It would, in fact, be possible to scratch-build rolling stock, just buying wheels, couplings, and other parts separately. A set of wheels and couplings costs £1.62 to give an idea of price. Every detail is faithfully reproduced in the wagons, all doors opening and all being latched in prototype fashion. The wagons, in fact, have exactly the 'feel' of the real thing, chunky and tough.

For many people the LGB system is the nearest they'll get to running a full-size railway. We found the experience delightful, not least because everything comes so close to perfection as to make no difference. It is really tough and our samples have survived the boisterous

attentions of the local juvenile populace with not a scratch. For garden railways, of course, the LGB system is in its element. It can also be used as a semi-permanent garden railway. We left ours out for over a week in a spell of fine weather with no ill-effects, just digging out a road bed in the soil for the track.

By normal model standards the prices at first glance are high, but in actual fact for the superb quality offered they are on the low side. The complete goods train set and track we had for test costs £33.80—for a locomotive, 4 ft circle of track, wagon, van, wiring, track clips, and four scale figures. This compares quite favourably with, say, Gauge 0, where a locomotive alone at this price would be quite a bargain. If a syndicate of friends or a club bought the items collectively for a single LGB layout the price could work out modestly enough per head.

The importers of this range are Beatties Ltd and their shops in London, Leeds, and Manchester carry stocks. A free price list is available in return for a SAE from Beatties, 112 Holborn, London WC1. They also have a superb colour paperback book, *Die Welt der LGB*, which acts as a catalogue and guide to the system. All items are shown in colour—and pictures of the actual prototypes are given for good measure. This book costs 37p, postage extra. Lindberg make a range of huge plastic building construction kits (station, engine shed, etc) to go with LGB, while many 1:24 scale car and truck kits also match. C.O.E.

Frog 'Spin-a-Prop' motors

RIGHT from the earliest days of static scale model aircraft, even before plastic kits appeared, there has been a perpetual fascination in models with propellers which actually spin round in prototype fashion as though the model actually has an engine. At various times small electric motors have been sold which can be built into engine cowlings to achieve this very effect. Such artifices have always been in short supply but this situation should now be remedied by Frog who have just brought out new 'Spin-a-Prop' sets of miniature Mabuchi motors, each about 1/4 inch diameter to fit inside most 1:72 scale engine cowlings. Obviously these are too big for some kits, particularly vintage types, but the motors fit nearly all World War 2 types. Specifically Frog intend these engines for the recent kits they have produced under the 'Spin' designation, as these have special brackets and supports for the motors and their attendant HP7 battery (not supplied with the set, incidentally). However, the motors can be used equally successfully with any other suitable kits so long as the modeller is willing to make his own brackets from plastic card, a simple enough task. Full installation and wiring instructions (and

Continued on page 98

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Part Two is by Gerald Scarborough, expert modeller and regular contributor to *Airfix Magazine*. This section is devoted to a thorough coverage of the huge Airfix 1:24 scale kit of the Spitfire, and shows how this superb model can be turned into a super-detailed museum quality replica, incorporating even more detail than the kit itself provides. Also included are step-by-step instructions for converting the basic kit into other marks, including the Spitfire VB (shown below) and the Seafire IIC, and hints on painting and display.

This informative book, which covers the Marks I to V, is illustrated with a wealth of rare pictures, many hitherto unpublished, and many fine drawings. It will make an excellent reference book for aircraft modellers. 9 3/4" x 7 1/4", 177 photographs and 34 line drawings. Case bound with full-colour laminated cover.

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The Krauss 0-4-0, an open truck, and a box van, all from the LGB range, shown on a 'temporary' garden layout.



New Kits—continued

wire) are given with each 'Spin-a-Prop' set. The motors start simply by flicking the propeller in prototype fashion and they can be stopped with the fingers as desired. In multi-engined types the motors can be run independently as required. Frog commend installing the battery in the fuselage; in some cases this might mean fitting the battery permanently, which is not a good arrangement as it cannot then be replaced and will ultimately leak, with dire results. In most multi-engine types it would be possible to make the battery removable by installing it in the bomb-bay, but otherwise it is really necessary to cut a detachable section underneath the fuselage. The alternative is to have the battery suitably hidden (for instance under a refueller tanker) adjacent to the aircraft in the manner which Airfix suggest for the 1:24 scale Spitfire. Quite obviously it is important for the modeller to determine the exact mode of installation before commencing assembly of the kit.

Our 'Spin-a-Prop' set was for twin-engine aircraft and costs 50p. A single engine set (ie, one motor) is available for 25p. Our sample came from Jones Bros of Chiswick who can supply by mail order, postage extra. In passing, it is worth mentioning that Airfix sell a similar motor intended to power the 1:24 scale Spitfire kit and this, of course, can be similarly adapted to fit inside other models. C.O.E.

Tamiya: 1:35 scale PzKpfw II Ausf F/G and Afrika Korps figures

TAMIYA'S now legendary ability to produce perfect fine-scale models of tanks is fully maintained by the latest release, a German PzKpfw II in 1:35 scale which is priced sufficiently modestly to tempt a lot of newcomers into modelling in this scale, we would imagine. Tamiya have chosen the Ausf G version for their kit which, by omission of the turret stowage bin, can be completed instead as an Ausf F if desired.

This is, of course, quite a small model, just 5 inches long, but it packs in just about every conceivable detail, as crisply moulded as ever and with such subtle touches as weld marks and suspension stops. On this model the suspension is completely dummy but is so perfectly detailed that it seems a shame to conceal some of it with the road wheels! The kit is initially released without a motor, though the hull is fitted out to take one and we imagine that a motorised version will come along later. The model just falls together, almost free of moulding flash and with only minimal cleaning up required. We cannot fault it in detail and the only possible suspect item is a couple of the optional divisional signs on the transfer sheet which were, we think, likely to have been pale yellow rather than the white provided. This is an entirely minor point, however.

A tank commander figure in Afrika Korps dress is provided but a splendid bonus is a separate set of four Afrika Korps infantrymen included in the box. These are the best Tamiya figures yet, complete with a choice of steel or tropical helmets. They have separate arms,

equipment, and weapons and can be assembled in varied poses. Detailed painting instructions and diagrams are given for both the figures and the tank. In our advance sample these were in Japanese only, but should be in English in the main delivery. The tank painting details include a very useful chart in full colour, a most happy innovation. Price of the kit is 99p, representing fine value. Any-one wishing to sample the delights of large-scale tank models could do no better than try this one as a starter. Imported by Riko, the kit should be available in October from all major model shops.

Tamiya will be producing shortly a PzKpfw III in 1:35 scale which features parts for making several model variants. An advanced glimpse of this shows it to be of similar high standard to the PzKpfw II. We'll give more details when this kit is released; meantime please do not confuse your local shopkeeper by asking for it now!

The Afrika Korps figures included with the PzKpfw II kit are also to be available separately, price 33p for the set of four, again very good value. C.O.E.

Protar: 1:6 scale DKW motor cycle

WE have recently received from Motomodelli Ltd of Sydenham a motor cycle kit, one of a series now of 26 kits, produced in Italy under the name of Protar. Some of these have been reviewed in previous issues.

This particular kit is a model of the three-cylinder Grand Prix 350 cc DKW, a machine of great potential among the sophisticated two-wheelers racing today. The parts are all pre-coloured, there being five different finishes. The engine is metallic grey, brake covers bronze, wheels chrome, cowling alloy, and seats black, so the need for any painting is reduced to a minimum. All the pieces, and there are over 150 of them, are cleanly moulded and clearly numbered.

The kit is remarkably complete; it even includes the pistons, cam rods and crankshaft in the engine. There is fully working suspension with coil springs. All the pipe work and cabling is provided, the fuel lines being in clear polythene as per the prototype, while a stand is included to support the finished model. A nice touch is the use of screws for attaching various sub-assemblies. The wheels, formed in two parts, are joined at the rims and carry the large brake drums, hence the spokes are quite short. It is on these latter that the really fastidious modeller might want to use a craft knife. The tyres, miniature Avon racing, need no attention before fitting. The completed wheels are mounted in the frame with metal bolts forming the spindles.

The fairing and windshield are constructed so as to be detachable by removing two small screws. It is the relative thickness of this fairing that the builder might be tempted to reduce by chamfering the edges, which are unavoidably, of course, slightly over scale.

The instruction booklet with its 43 steps aiding construction, in four languages, is very clearly illustrated and should present no trouble in assembling the kit into an accurate model of the competition DKW. The price is £3.95, making this kit the dearest in the range, but still excellent value when the fine quality and presentation is appreciated. Motomodelli's address is 52 Wells Park Road, London SE26. B.L.

Series 77: 1:24 scale pilots

NEW additions to the Series 77 Military Miniatures range are various pilot figures which are marketed in a white base paint at £2.15 or ready painted, as collectors' items for £7.50. The two figures we received for review were unpainted and superbly cast with a



lot of the detail added to the basic figure after moulding. Very little filing or trimming is necessary before commencing painting, tips for which have been given in the series 'Model Soldiers' by Roy Dilley in this magazine.

The RAF pilot figure looks very convincing with his handsome moustache, 'chute slung over his shoulder and all the intricate detail of the oxygen mask and radio connections, etc, and he would make a very useful figure in a diorama to complement the Airfix 1:24 Spitfire.

The other review figure is a little bit of a mixture as the basic pilot is German, complete with Iron Cross at the throat, in shirt sleeves and flotation jacket, flare pistol, watch, etc, but unfortunately carrying a British type 'chute over his shoulder!

The photographs will give some idea of how superb these figures can look when finished. The figures can be had from Series 77, 25 Britannia Drive, River View Park, Gravesend, Kent. They can be animated to customers' requirements, eg, leaning, pointing, walking, etc. Painting instructions are supplied with unpainted figures. G.S.

Tamiya: 1:35 scale Sheridan tank

THE announcement that Tamiya were to introduce a kit of the M551 Sheridan Armoured Reconnaissance Vehicle in 1:35 scale was greeted with enthusiasm by AFV modellers. This kit should be available in Britain shortly and we have been constructing a pre-release example of this model.

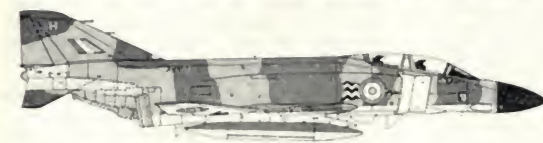
The Sheridan's chassis and running gear tend to remind one of the early

Continued on page 100

AIRFIX magazine

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New Kits—continued

Christie models as it is very low and rakish, but here the resemblance ends for the armament fit of the Sheridan is something that Mr Christie probably never dreamed of. This consists of the short-barrelled M81E12 Shillelegh gun/howitzer of 152 mm calibre and this stubby weapon is able to fire either a guided missile or a conventional round having a combustible cartridge case.

Despite the fact that the instruction leaflet supplied with the kit was in Japanese, construction was straightforward with parts fitting together with a minimum of trimming. It was noticed, however, that the illustrations in the leaflet were, in one or two instances not strictly accurate when compared with the parts shown. The leaflet also contains a development history of the Sheridan, photographs of a completed model and actual vehicles, painting instructions and diagrams for applying the excellent transfers. Kit box art is very good and as



usual with Tamiya, the main sprues of components are separately packaged.

This is a relatively simple kit to construct when compared with the Tamiya M60A1 or Centurion, but nevertheless, the completed model aptly catches the appearance of the full-size vehicle. Moulded in olive drab plastic, the lower hull is of the conventional 'punt' variety with suspension details and stub axles moulded on. Front idler wheel stub axles and brackets are of metal, held in place by nuts and bolts. The model is, of course, motorised and power is supplied by a Mabuchi RE 26 motor driving the rear axle through a gear train with an optional two-speed setting. The tracks are cleanly moulded in metallic grey plastic and have a most realistic scale appearance. The road and idler wheels are retained on their axles by soft plastic collars, and on initial assembly the wheels tended to bind, but adjustment and a touch of lubricant soon cured this. Performance on the flat and over obstacles was good with the tracks giving a firm grip. Two spare main road wheels are, incidentally, provided in the kit.

Also nicely moulded in olive drab plastic, the upper hull and sides have bow plate detail and engine grilles and louvers all sharply defined. A tow-ropes is, somewhat surprisingly, moulded on the sloping back plate, with pioneer equipment applied separately. The driver's visor on the Sheridan is novel in that it consists of a semi-circular 'lid' which rotates around behind the driver's head when in the open position. This is faithfully reproduced on the model and a driver figure with separate arms is also provided.

Perhaps the most striking feature of the M551 Sheridan is the turret with its large bore, short-barrelled gun and festooned as it is with .50 calibre ammunition boxes, a jerrycan and eight bomb throwers. The turret in the kit is supplied in upper and lower halves and, of course, rotates, as does the commander's cupola with its well-domed hatch which opens up in two halves along the centre line. Mounted on the cupola ring is a .50 calibre HB Browning machine gun. Why kit manufacturers cannot seem to get an accurate representation of a simple item like a machine gun is difficult to understand, but the one supplied in the Sheridan kit is reasonably accurate although the grips need some attention with a fine file to achieve a more authentic appearance. A pleasing touch is the provision of an ammunition box and supporting cradle on the machine gun. It was found that on our kit the rather complex-looking mantlet moulding did not elevate and depress too smoothly over the leading edge of the turret.

The various small components are moulded in olive drab plastic with a semi-gloss finish which is rather brittle and care is required when separating parts from the trees. These small points apart, the kit is highly commended. It is imported and distributed by Riko. Price is £2.25. L.A.M.

Lasset: 54 mm figures and accessories

NEW from Lasset this month came two items, a French Napoleonic Grenadier de la Garde, and a German 8 cm Mortar of World War 2. The Grenadier is an exquisitely designed figure with every detail of uniform and equipment finely engraved. His pack, sword and bayonet, and musket are separately cast items, soldered on, and each figure is individually animated to become a unique piece. The skills of designer, caster, and animator combine to make this an outstanding item, the first in what we hope will be a comprehensive series of 'Napoleonics'. Assembled and undercoated ready for painting, figures can be obtained from Greenwood and Ball, Martinhoe, East End Way,

Fallschirmjäger—from page 95

two wheels from the spares box (6 mm in diameter and 1.5 mm in track width) on the stub axles on the triangular piece at the front. The hollow box at the rear of the barrel is cut away so that it is clear of the breech. In line with this box, a small curved piece is cut out of the gun-shield. The gun is now painted sand colour, and the edge of the gun-shield painted with a mix of black and sand to simulate the double spaced-armour construction of the real gun.

The LG.1 75 mm recoilless rifle has to be made from scratch, but is extremely simple in construction. The barrel is a 15 mm length of Slater's 2 mm plastic rod, bound with Sellotape to obtain the thickening at the breech and the rear end. A square of 40 thou Plastikard 3 mm square provides the breech plate. The mounting cradle is from 20 thou Plastikard bent to shape and the chassis again from 1 mm plastic rod. Wheels are 9 mm

Pinner, Middlesex, at £1.06 each, postage extra. The same firm can also supply the 8 cm mortar, another excellent piece of equipment, which comes boxed in kit form, complete with barrel, tripod, base-plate, and two bombs, at 50p each, postage extra. R.S.D.

Frog: 1:72 scale Do 17Z

JUST released by Frog is a very fine new kit for the Dornier 17Z which is up to this firm's highest standards. It appears to be extremely accurate and the surface detail is nicely restrained with just panel lines finely depicted so that the characteristic 'smooth' finish of the original is captured to perfection. All parts fit together well and this is certainly the best Frog kit so far released this year. At 45p the price is very reasonable for the size and detail of the finished model. Excellent colour painting schemes are given with neat transfers for a Battle of Britain Luftwaffe machine of KG3 or a Finnish Air Force aircraft of 1943 vintage. Our sample came from Jones Bros of 56 Turnham Green Terrace, Chiswick, who can supply by post, postage extra. C.O.E.

Modelmark: 1:72 scale Luftwaffe transfers

MODELMARK is a new firm of 8 Mighell Avenue, Redbridge, Essex, which have now taken over the marketing in Britain of Bare Metal, the foil covering material we reviewed a couple of issues ago. This firm has now issued a transfer sheet, first in a promised series. Priced at 25p plus 5p postage from the above address, the sheet gives neatly printed markings for three aircraft, a Messerschmitt 109E of Jabo-Gruppe Afrika, a Messerschmitt 110C-4 (similar to August's conversion of this aircraft kit) of 1/ZG 52, and a Messerschmitt 262A as flown by Major Nowotny. The markings are neatly and accurately printed and in perfect register. With the transfer sheet comes a very neat reference sheet giving line and tone drawings of each aircraft to show paint schemes and marking positions. Brief details of the individual aircraft are also given. C.O.E.

diameter from the scrap box. If care is taken to ensure that all parts fit correctly, an excellent replica should result.

Drawings for this month's models appear on page 105 due to lack of space here.

Below: Small arms and ammunition were dropped in separate containers as described last month.



AIRFIX magazine

Letters to the Editor

Transfer hint

READERS may be interested in a little tip of mine to get codes, serials, and numerals to look 'painted on'. For instance, serial numbers are always a nuisance due to their size. You can't cut around each little digit, so more often than not you get a semi-transparent rectangle behind the serial number! As I always varnish my kits, this transparent backing shows up even worse.

So, to avoid this, I cut the serial (or whatever) as close to the digits as possible, and soak in water as usual. Slide it off the backing and pat it dry in a handkerchief or soft cloth. Now turn to the kit, and varnish the area where the serial is to go with Humbrol Matt Varnish (or a semi-gloss mixture for modern-day aircraft). Then place the dried serial on to the varnished area and pat dry as you would a normal transfer, ensuring all the air bubbles are squeezed out. The varnish will dry in a matter of minutes. The result is a serial looking for all the world as though it had just been painted on.

You can go ahead and varnish the rest of the airframe then. The same method can be used for code letters or Staffel numerals/letters. The beauty of this method is that not only is it simple, but the transfers stay stuck and will never peel off. Neil Robinson, Sheffield.

Markings changed

IT may be of interest to readers who build kits of Royal Air Force Transport aircraft to know that the words 'ROYAL AIR FORCE AIR SUPPORT COMMAND' have now been replaced by the words 'ROYAL AIR FORCE'. This applies to all transport aircraft operating out of Great Britain. Overseas commands are retaining their own command lettering, eg, NEAR EAST AIR FORCE.

Simon R. P. Thomson, Reading, Berks.

Luftwaffe 'Harvards'

IN the June issue Mr Rice was most observant in his mention of the 'Harvards' in German markings shown in Ries' book. Airframe conversion kits also fell into this seemingly obvious error in their instruction sheet for the Harvard canopy.

What someone should have read was the review of the ABT decal sheet for the German P-47 and 'AT-6' in the January issue of my *Model-Aire International*. In Ries' books and in the *Air Combat* magazine article on this subject, these planes are described as NAA-64s.

The North American NAA-64 bore a striking resemblance to its cousin the AT-6 but there were a number of differences. These are outlined in the drawing

Right: Drawing of the NAA-64 in German markings is from 'Model-Aire International' as referred to by Tom Young in the letter above. 'Model-Aire International' is a privately produced duplicated magazine devoted to lengthy 'in depth' reviews of new kits, and specialised articles on markings, etc. Copies cost 35 cents each, or \$4 for 12 issues (post paid). Anyone interested contact Tom Young direct.

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters column. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

with this letter. In capsule: The NAA-64 had fixed undercarriage with spats and pants as opposed to the retractable undercarriage of the T-6. The spats were removed in the photos of the German planes and I think on the French planes, too. The pants, however, are visible. The port intake on the fuselage just aft of the cowl is not present in the photos of the German and French aircraft; this was replaced with a small scoop on top of the cowl on the NAA-64 which appears in photos. The clincher is the exhaust pipe. The T-6 had a stack running out of the rear of the cowl, flush along the fuselage. The NAA-64 had a pipe sticking straight out from the front of the cowl and that shows up quite clearly in the photo of the German machine in the Ries book.

Tom Young, Model-Aire International, PO Box 237, Sausalite, California 94965, USA.

Polish MIG

WITH reference to the letter by Wieslaw Fuglewicz, in the August issue of *Airfix Magazine*, the Polish Navy version of the MIG-15 to which he refers, with a ventral radar bulge under the nose, believed to be for ground-attack, was designated the LIM-4.

Polish licence-built versions of MIG aircraft were as follows:

- LIM-1: initial version of MIG-15, with RD-45 engine.
- LIM-2: uprated MIG-15 bis, with VK-1 engine.
- LIM-3: two-seater MIG-15UTI trainer version.
- LIM-4: Polish Navy ground-attack version, presumably of MIG-15 bis.
- LIM-5: MIG-17, the version known to NATO as Fresco-C.

Several of these were modified as light-weight battlefield close-support fighters, with considerably enlarged wing root chord and thickness. Designation of the modified version is not known.

I should be glad of any confirmation from readers as to whether the LIM-4 was a modified LIM-2, or whether it was built 'from the ground up' as the LIM-4? As the code numbers run from 100 to

200, this indicates a relatively small production batch, compared with the very large numbers of LIM-2s produced. I imagine it would have been a relatively simple matter to modify a small batch of production LIM-2s by fitting a small radar scanner, and modifying the cockpit layout to accommodate the appropriate electronics.

Aside from the ground-attack radar, the armament of the LIM-4 was (as far as I know) standard LIM-2/MIG-15 bis armament. Again, I should be glad of confirmation from readers who may be better informed on Polish military aviation.

I believe quite a relatively small batch of LIM-1s were produced, before the switchover to the LIM-2. Code numbers, I believe, started with 01, 02, 03, etc, and only ran to a two-digit number when production ended. I wonder whether any reader has figures of actual production numbers of this, and the other LIM types?

I have a coloured picture of a line-up of naval LIMs, believed to be LIM-4s, but the ventral radome is not visible, as they are shown $\frac{1}{4}$ rear. The aircraft nearest to the camera is probably No 106, but the code number (heavily retouched) appears as 1106! Again, I wonder whether any reader has this or any similar picture of No 106? Or did the Polish Navy operate any LIM-2s in the 1100-2000 range?

E. Blackwell, Upper Ventnor, IOW.

Thermal sleeves

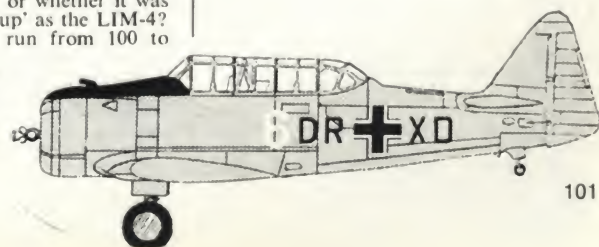
IF some modellers are not satisfied with the thermal sleeve on the Airfix Chieftain I have discovered a way to make a realistic one. Wrap tissue paper round the barrel and glue it. When dry, wrap cotton round to represent straps. Then paint it dark earth or similar colour.

Robert Gray, London SW19.

Saturn 1B

IN the August 1971 issue, in the section 'News from Airfix' relating to the Saturn 1B, a technical error was made. Present American plans do not envisage the Manned Orbiting Workshop (Skylab) being launched by the Saturn 1B. This was the original plan, with the S-4B stage doing its job as a genuine stage to put itself into orbit, with a second S-1B putting the first crew into the same orbit in a CSM unit. This would dock with an adaptor unit on the S-4B, and the crew would then have the job of equipping the

Continued on next page



Letters—continued

Skylab for use. However, when it was realised that work in weightlessness was much more strenuous than thought before, the plan was changed to fully equip the Skylab on the ground, with this being put into orbit by the first two stages of a Saturn 5. This has the additional advantage of being able to include the Apollo Telescope Mount right from the start, and thus when the crew are orbited by a Saturn 1B they are able to carry out experiments as soon as they have pressurised the workshop.

Now, concerning the actual kit, what was the point of including the LM? Since the only manned S-1B mission was Apollo 7, which did not include an LM, the Saturn 1B/LM combination never existed! This slip apart, the Saturn 1B kit is a fine one, and perhaps it paves the way for more American boosters, such as the original Saturn 1, or an Atlas or Titan?

D. Clarke, Newbold Verdon, Leics.

Bronco colours

I WONDER when Airfix released their kit of the Bronco they realised just how Bu No 155394, the subject of the kit, would change markings. In June 1970 I logged this aircraft at Vung Tau (South Vietnam) in US Navy colours; unluckily I could not trace the unit.

The aircraft was Field Green overall with Light Grey undersurfaces, standard national insignia and ejector warnings, standard black serials and 'Navy' markings. On the nose was a white code 111 with the unit code UM on the fins. The light grey ventral tank carried a red and black shark mouth, while twin rocket launchers were fitted on the Sidewinder pylons under the wings.

A. W. Munro, RNZAF Base, Wigram.



Bronco 155394, referred to above. Picture is hazy but shows marking positions and shark mouth painted on ventral tank.

Colour changes

READERS may be interested in the following colour scheme details now applicable to the Westland Scout. Firstly, the exhaust pipes are now painted a slightly lighter green than the camouflage. The rotor gearbox is painted dark earth, as are parts of the rotor head: the oil cooler fan is matt black, whilst the remainder of the engine is varying shades of dull natural metal. The engine platform is of green non-slip material with thin dayglo stripes. Fin stripes are no longer carried and small size roundels are used. Lettering is in black. These details were noted on XR628 'B' of 666 Sqn but can be seen on other recently overhauled aircraft.

M. Bursell, Cottingham, East Yorks.

R. Srodzinski of Plymouth made this fine BR 9F 2-10-0 with Franco - Crosti boiler from the Airfix 'Evening Star'. All the Franco - Crosti fittings were made from other Airfix kit parts. Tender was also modified.



Figure tip

FOR people who do not like the 'slab of concrete' that is attached to the feet of OO/HO figures as a base, here is a small tip.

First, cut off the base of the figure, then, using polystyrene cement, glue the figure to a mirror. When the cement has dried, slide the blade of a craft knife under the cement and lift. The figure is left with transparent 'snowshoe'-like blobs, not readily visible, which allow it to be free-standing without the moulded base.

Neal Kirwan, Dublin 3, Eire.

Filling material

I HAVE only recently started reading your excellent magazine, but one thing I have noticed is that all your contributors, in their conversion articles, recommend the use of body putty for filling cracks, etc. Why this should be so I have never been able to fathom, for it really is pretty appalling stuff; it's hard to work with, it dries too quickly, it is very crumbly and has a rather poor surface texture when dry.

I have for some time now been using a different and, in my opinion, vastly superior substance—the well-known and widely available Polyfilla. It's most excellent stuff if used as follows: Mix up some Polyfilla to pasty cream-like consistency, and apply to wing roots, fuselage joints, etc, with a moist finger, working it well in and smoothing it well down. Allow to dry, then remove any excess or overspill with a damp, clean handkerchief (it washes off easily!), seal with a coat of flat paint, and you are left with a fine, smooth, clean, perfectly-filled joint, ready to paint.

I hope this may be of interest to readers, especially to beginners, as it's far easier and quicker than using body putty, and gives vastly superior results.

J. J. Walker, Edinburgh.

A reader remembers

YOUR cover picture of a Hawker Fury II on the August issue of *Airfix Magazine* brought back happy memories of that particular year, 1937. As a young lad of 17 years of age and a junior member of the Air League of the British Empire, I was entitled to visit, free of charge, any Royal Air Force station that was open to the public on Empire Air Day.

So it was that on May 29 1937, I visited North Weald, Essex, Royal Air Force. I remember at the time cycling all the way from East London, arriving at about 10 am. The Station wasn't open officially until 2 pm, but a kindly RAF Sergeant allowed me in providing I behaved myself and didn't touch anything!

I parked my bicycle by the side of a hangar (that same hangar is still there today) and, on sighting the various aircraft on static show, couldn't get to them quick enough. And what a variety there was!

First to attract my attention was an Avro Anson, at that time the latest reconnaissance aircraft to enter RAF service. My enthusiasm turned to disappointment when I saw it was deficient of a mid-upper gun turret, and on asking a nearby airman why this was so, he looked around in a very mysterious manner before replying, 'Actually,' he said, 'the gun turret is still on the secret list and they wouldn't allow it to be seen. That's why we took it off.' (Photo No 1).

I swallowed the explanation, only to learn in later years that the real reason was because production of the Anson outstripped that of the turrets.

Next to be visited was a Hawker Hind day bomber, complete with Lewis gun mounted in the rear cockpit. This aircraft belonged to No 15 Bomber Squadron which, at that time, was stationed at Abingdon, Berks. What a thrill when a kindly fitter allowed me to climb, first into the pilot's cockpit and, secondly, into the rear gunner's cockpit.

Photograph No 2 shows the Hind and it is interesting to compare this with the photograph on page 658 (August issue) showing the Hawker Hart (note difference in the exhaust and design of the rear cockpit).

One of the largest aircraft on show that memorable day was a Handley Page Heyford bomber (squadron unknown), looking very drab in the matt green livery with the red and blue roundels (Photograph No 3).

Another light bomber on show was the Fairey Gordon, at that time being replaced by the Hind. This aircraft was overall silver with the top decking of the fuselage in dark green (Photograph No 4). I remember the two fitters sitting in the aircraft and asking me to take the photograph, as one said, 'So I can show the folks back home the type of plane I fly!' What a line-shooter!

Finally, the Fleet Air Arm was represented by this Blackburn Shark, officially designated as a Torpedo/Reconnaissance/Bomber! At least, that's what I was told and I had no reason to disbelieve it. This aircraft was overall silver with the top decking in dark green. It did not carry the usual coloured band on the fuselage or the Squadron number which was prevalent on Fleet Air Arm aircraft at that time (Photograph No 5).

I still visit North Weald every Whitsun Bank Holiday Monday, but I still have memories of May 29 1937, and those old aircraft of yesteryear.

C. North, Romford, Essex.

AIRFIX magazine

photoPAGE

More rare pictures from readers with captions by Michael J. F. Bowyer. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.

The first five pictures on this page are from C. North whose letter appears immediately opposite. The numbers are keyed to the letter. Key to remaining pictures: (6) An all-yellow Harvard with black A/D panel and walkways, 2956:57, from a training unit in Canada, about 1943. Note the B type roundels (red/blue on wings) and tall fin stripes (M. Alcroft). (7) B-25 327774 was an RAF machine with only a US serial displayed in 1947 when it was the personal transport of the C-in-C Middle East. Name 'Mercury' (partly worn off) is painted



below cockpit. A/D panel is olive drab and there is evidence from other small stencil panels, etc, that the aircraft was once olive drab grey overall. A 'two star' general flash is painted above the outboard tail stripes on a blue background (M. Lowe). (8) Sea Otter RD 873 being hoisted aboard a carrier about 1950-51, the ship being unidentified (anyone know it?). Machine is in the usual dark sea grey/sky finish with red propeller warning panels, and the wing walkways are marked with black footprints (J. R. Cox).



October 1971

Fifth International Helicopter Rescue Meeting

A colourful display of skill by 'Search and Rescue' aircraft of eleven services

Report and pictures by Adrian Vicary

DURING the week commencing June 14, 1971, helicopters from seven NATO countries took part in the 5th International Helicopter Rescue Meeting, which was held at RAF West Raynham, Norfolk. The event was composed of three competitions, Navigation, Scrambling and Precision Winching.

On the Thursday, June 17, the aircraft took part in the scrambling competition. At 15-minute intervals the crews sprinted 100 metres to their machines, climbed in, started up and flew as quickly as possible to Cromer Lighthouse. From here they flew a short distance westward along the coast to pick up a would-be 'survivor', seated in a rubber dinghy about half a mile off-shore. After winching him up he was landed on a cliff-top landing area and the competing aircraft then returned to West Raynham.

The competition was timed from the start of the sprint to the aircraft, to the moment when the feet of the survivor left the rubber dinghy. On this basis the Royal Netherlands Air Force 'A' team were the winners.

The other two competitions were both won by the Royal Navy, navigation by their 'B' team and precision winching by their 'A' team. The Royal Navy 'B' team were judged best crew overall, with the Royal Belgian Air Force 'B' team second and the Royal Navy 'A' team third. The overall winners of the competition, taking the Henri Dunant Trophy, were the Royal Navy with 5,168 points.

The other placings were as follows:

Position	Entrant	Points
2.	Royal Air Force	4993
3.	Royal Danish Navy	4930
(equal)	US Air Force	
5.	Royal Netherlands Air Force	4800
6.	Royal Danish Air Force	4630
7.	Royal Belgian Air Force	4475
8.	Federal German Air Force	4329
9.	Federal German Navy	4325
10.	Royal Norwegian Air Force	3858
11.	Royal Netherlands Navy	3227



Top: One of the Royal Norwegian Air Forces' two Bell UH-1 helicopters. This aircraft was flown by their 'B' team. **Above:** Of the two Alouette III aircraft entered by the Royal Danish Navy, the first was float-equipped and the second (pictured) had a wheeled undercarriage. Note anchor insignia and winch arm.



Above, top to bottom: The largest helicopters at the meeting were the two Sikorsky S-61A Sea Kings entered by the Royal Danish Air Force, the second of which is seen here. This particular Agusta-Bell (1)UH-1 of the Royal Netherlands Navy suffered winch failure, necessitating the return later of the same crew in their other aircraft. The Federal German Navy's 'A' team Sikorsky H-34G about to land. OT-ZKD, first of the two Belgian Air Force Sikorsky HSS-1s.

TABLE OF COMPETITORS			
Entrants	Aircraft Types	Serials, Codes, etc	Brief colour-scheme details
Royal Air Force	Westland Whirlwind	XJ437	Yellow overall
	HAR 10	XF351	
Royal Navy	Westland Wessex	XM926	Dark blue-grey & dayglo orange
	HAS 1	XS869	Natural metal + black-edged yellow tail-boom bands
US Air Force	Kaman HH-43B	0-91564	Olive drab overall
	Huskie	24521	Natural metal & dayglo orange
Royal Norwegian Air Force	Bell UH-1	JT.B	Dark green
		JT.D	Dark green
Royal Danish Air Force	SIKORSKY S-61A	U-240	Natural metal & dayglo orange
		U-277	Natural metal & dayglo orange
Royal Danish Navy	Sud-Aviation SE-3160	M-030	Natural metal & dayglo orange
	Alouette III	M-072	Olive drab overall
Federal German Air Force	Bell UH-1D	71+20	Natural metal & dayglo orange
		71+53	Black & dayglo orange
Federal German Navy	Sikorsky H-34G	81+00	Dark green
		81+07	Dark green
Royal Belgian Air Force	Sikorsky HSS-1	OT-ZKD	Black & dayglo orange
		OT-ZKE	Dark green
Royal Netherlands Air Force	Sud-Aviation SE-3160	H-08	Dark green
	Alouette III	H-67	Dark green
Royal Netherlands Navy	Agusta-Bell (1)UH-1	221	Dark sea grey with sky undersides
		226	

(Also present was a Whirlwind HAR 10 XP394 of the Central Flying School painted in red, white, and pale grey; but this aircraft was used only to assist in placing 'survivors' in the rubber dinghy, it was NOT a competing aircraft.)

New Books—from page 75

book is a comprehensive record of all these important developments, and gives a very complete picture of the development of the Polish aircraft industry up to the start of the Second World War. Divided into four sections, this excellent book covers the work of the early pioneers, the main aircraft establishments, individual and amateur designs, and gliders and sailplanes. Extensively illustrated with both photos and drawings, this 760-page book does a splendid job of acknowledging and recording the achievements of a nation which is still among the world leaders in some fields of aviation.

Junkers, an Aircraft Album.
P. St John Turner and Heinz Nowarra.
Ian Allan Ltd, Terminal House,
Shepperton, Middx.
£2.10.

THIS is another volume in the 'landscape' format aircraft album which Ian Allan launched recently. It follows exactly the same style as the Heinkel and Handley Page books and is, in our view, the best yet. There are over 150 pictures showing the various Junkers types, some of them rather familiar but most quite rare and certainly new to the average reader. In straightforward manner the book gives a brief history of the firm's foundation, then goes on to cover every Junkers aircraft type by type from the J1 of 1915 up to the Mistel combination aircraft of 1945. All the major types are shown with several pictures, while minor

types have a single photograph. Basic specifications are given and there is a chronological check list of types produced.

TRANSPORT

Loco Profiles: Norris Locomotives; BR Britannias; Nord Pacifics; Pennsylvania Pacifics; Crewe Type.
Profile Publications Ltd, Coburg House, Sheet Street, Windsor.
40p each.

THE latest five books in the Locomotive Profile series are all superbly done. From the modeller's point of view the middle three of the above list are all most useful since miniature versions of the respective types are available and the Profiles are most handy for painting and detailing. The Britannia and Pennsy titles are particularly outstanding, and are indispensable purchases for anyone with the Triang or Minitrix models of the Britannia or Pennsy K4s.

A Regional History of the Railways of Great Britain, Vol 3.
H. P. White.

£2.50.
A Century of Traction Engines.
W. P. Hughes.

£1.50.
David & Charles Ltd, South Devon House, Newton Abbot, Devon.

THESE are two earlier reference books which are now re-issued in new editions, the latter in paperback instead of its original hardback format. H. P. White's book deals with the development of the railway systems in suburban London and is specially interesting due

to the rapid growth of the metropolis in the railway age. Included are some fascinating 'before and after' pictures of well-known stations showing how the areas and/or styles changed over the years.

A Century of Traction Engines is a very fine basic reference book on traction engines (mainly in Britain) which covers all the technical developments in this field from the mid-1850s onwards. It is packed with drawings and rare pictures and, using this, one has virtually all the essential information in one handy volume. Understandably, then, this is one of those books which has run through several editions without going out of print and it is highly commended as an addition to anyone's home library. It's the sort of book we'd suggest to anyone who feels his interest in the subject doesn't run to an obsession but justifies one single reference book.

London Trams in Camera.
Julian Thompson.
Ian Allan Ltd, Terminal House,
Shepperton, Middx.
£3.15.

A MOST valuable reference book this, for it is a highly detailed record in pictures and extensive text of the last three years of tramway operations in London, 1949-52. It is most absorbing and brilliantly presented—the sort of book which made us want to rush out and buy some tram kits to get a tramway layout started! How empty London looked twenty years ago and how very dated it all seems now. It's well worth reading even if you aren't a tram enthusiast.

Display Piece—from page 93

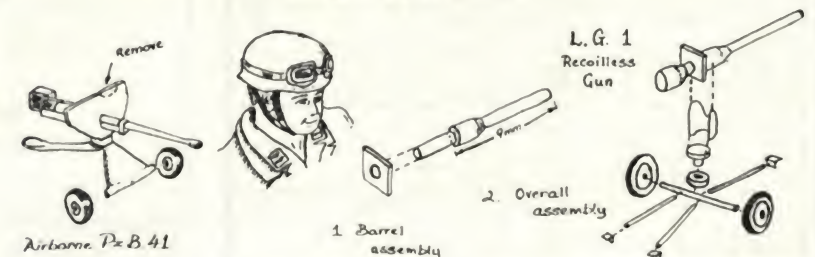
Finally, the coupling and piston rods were stuck on to the black paper in the appropriate positions and painted a 'steel' colour, using Humbrol enamel paint.

Although this profile was designed to house nine Airfix model locomotives, it can obviously be adapted to hold more or fewer models, and as well as being a showcase, it is an unusual and decorative ornament in the living room! Other model locomotives would fit equally well—an ideal display piece if you've more locomotives than track on which to run them.

The idea should be useful to ship modellers using a ship outline.

Fallschirmjäger—from page 100

Constructional details for this month's models (see page 95).



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I do not claim to have the largest stocks but I do have the best display models. Come and see how they should be put together, and perhaps I can sell you some of the following items. Plasticard, Battle Grounds, Historex, Bellona Prints, Profiles, all makes of plastic kits, Wilhelmshaven Card Models, also large selection of books

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114 DH Devon	25p	Airfix Heron	34p
115 Avro Anson C19/T21	25p	Airfix Anson	24p
116 Vickers Wellington I & XIV	25p	Airfix Wellington	50p
117 B24D Liberator	25p	Airfix B24J	65p
118 Arado 234C		Lindberg Ar 234B	45p
Fieseler Reichenberg IV (Manned V-I)			
FW 190 D-9	25p	Frog Spitfire & V1	27p
119 Ju 87D-3 Transport	35p	Airfix FW 190D	17p
120 Lockheed P38-M		Frog Ju 87D/G	27p
N.A.T-7G/Harvard IV	20p	Frog P-38 J/L	27p
121 N.A. F86D Sabre Fuselage	30p	Airfix Harvard	17p
221-1 Decals for F86D Sabre	40p	Hasegawa F86F	35p
122 Me Bf 109B	30p		
501 Sturmtiger	30p		
502 Jagd Panzer IV	30p		
222 Decals for Canadian Aerobatic Teams	40p		

Full details of these and earlier conversions (101-112 @ 20p), also forthcoming releases and the well-known injection-moulded conversions, in our full AMC/TSK lists, price 5p.

NEW FROM RIKO		
1/35 Centurion	£2.50	
1/35 Saladin	95p	
1/24 Kubelwagen	90p	
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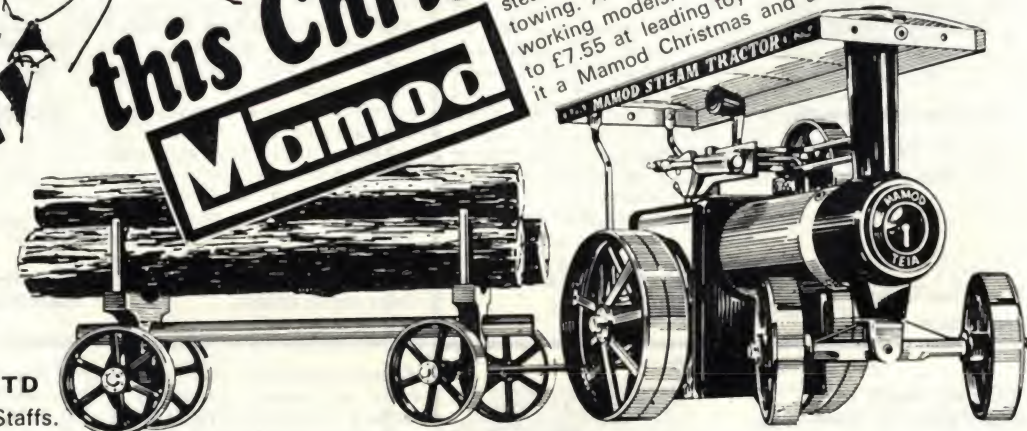


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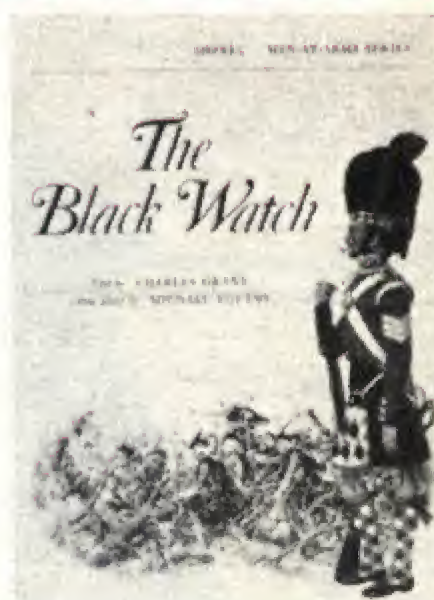
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